Volume XX Number 12

# DISEASES OF THE NERVOUS SYSTEM

*A Practical Journal on Psychiatry and Neurology*

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(CONTENTS ON PAGE 554.)

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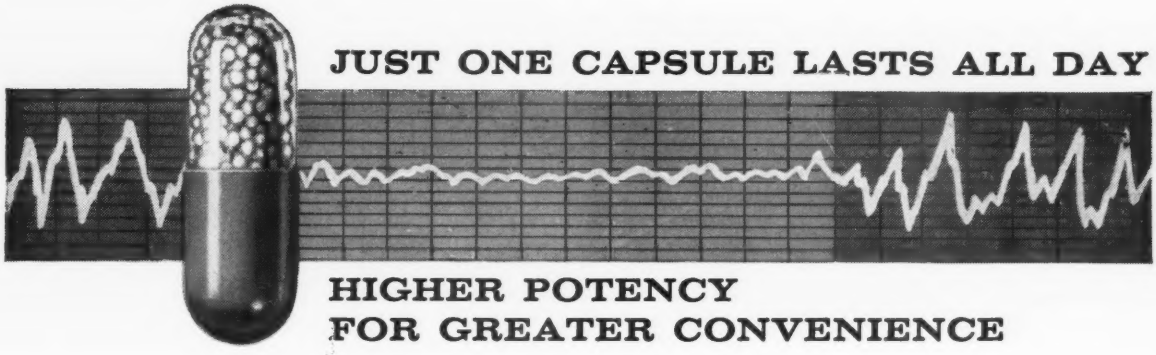

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# DISEASES *of the* Nervous System

## Contents

PSYCHIATRIC TREATMENT IN A UNIVERSITY SETTING ..... 561
George C. Ham

ROLE OF ANXIETY AND TENSION IN INSOMNIA ..... 567
Oscar Rozett

EXTRAPYRAMIDAL SYMPTOMS OF TRIFLUPROMAZINE, MEPAZINE, PROCHLORPERAZINE ..... 569
Harry F. Darling

MEDICO-LEGAL ASPECTS OF ELECTROSTIMULATIVE THERAPY ..... 572
John D. Moriarty and Armond M. Jewell

POST-GRADUATE PASTORAL COUNSELING SEMINARS ..... 575
E. Adams Daneman and John I. Smith

TREATMENT TECHNIQUE AND APNEA IN ELECTROSHOCK ..... 582
T. J. Marshall and D. Dobbs

SYMPTOM RELIEF, AUTHORITY SUBSTITUTION, AND SUGGESTIBILITY, WITH SPECIAL REFERENCE TO HYPNOTHERAPY ..... 583
Jerome M. Schneck

MEPROBAMATE AS AN AID IN PSCHOTHERAPY ..... 587
Warren J. Muhlfelder, Gloria L. Garcia and Hamblen C. Eaton

EFFECT OF NIALAMIDE ALONE AND IN COMBINATION IN TREATMENT OF DEPRESSION ..... 591
Sam Parker

REPORT ON A NEW DRUG, CAPTODIAMINE ..... 594
Charles W. Castner and Roy C. Noble

MARSILID AND EPINEPHRINE METABOLISM ..... 597
Abram Hoffer

INDEX ..... 602

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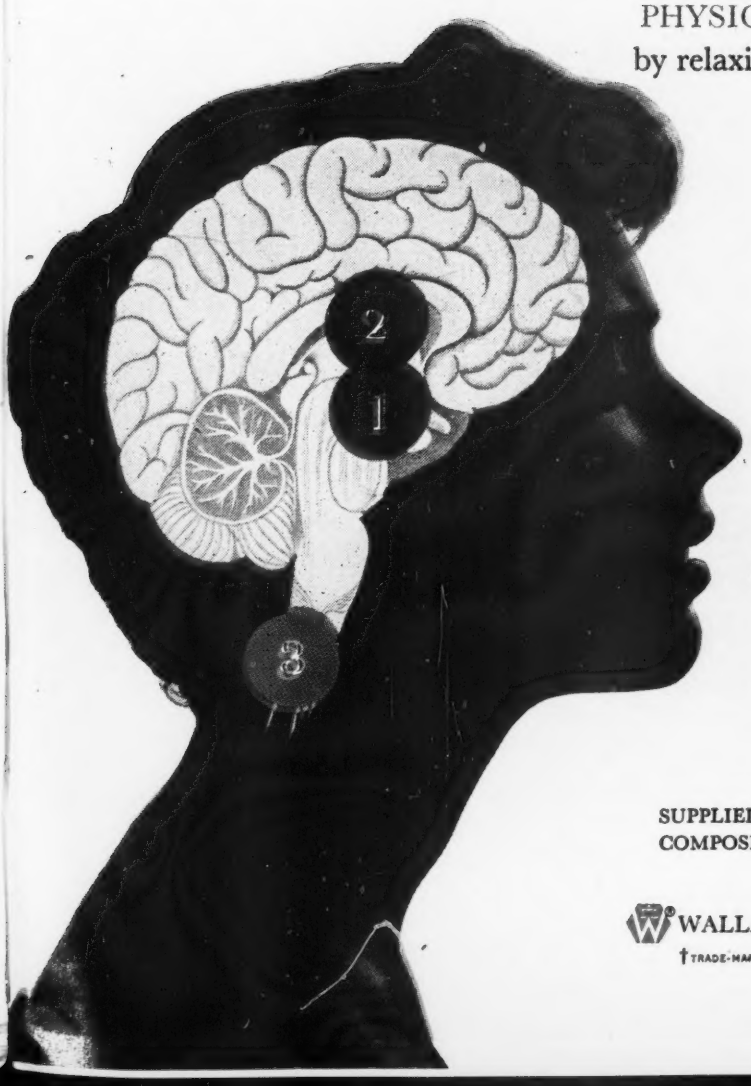


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***references:*** 1. Sainz, A.: The Phrenopraxic Activity of a Non-noxious Antidepressant, *Ann. New York Acad. Sc.* (in press) 1959. 2. Thal, N.: Cumulative Index of Antidepressant Medications, *Dis. Nerv. System 20*:197 (May) 1959. 3. Saunders, J. C.; Roukema, R. W.; Kline, N. S., and Bailey, S. d'A.: Clinical Results with Phenelzine, *Am. J. Psychiat. 116*:71 (July) 1959. 4. Arnow, L. E.: Phenelzine: A Therapeutic Agent for Mental Depression, *Clinical Med., 6*:1573 (Sept.) 1959. 5. Dickel, H. A.; Dixon, H. H.; Shanklin, J. G., and Dixon, H. H., Jr.: Tension Fatigue States and Their Adjunctive Treatment Using Nardil, *Clinical Med., 6*:1579 (Sept.) 1959.

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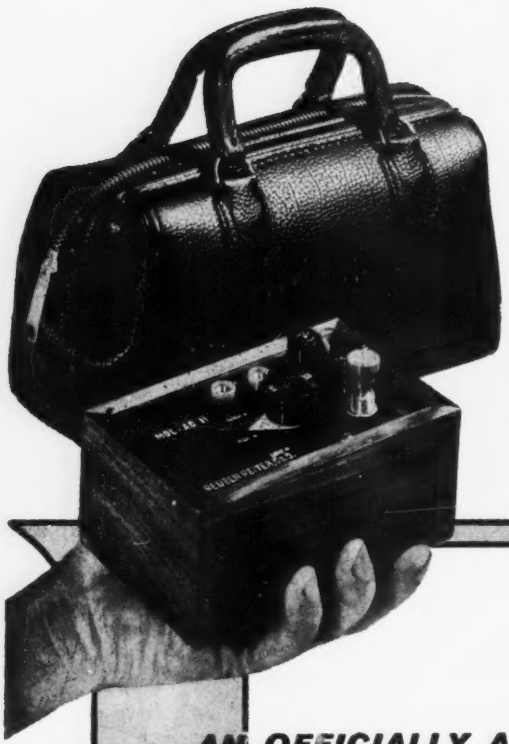

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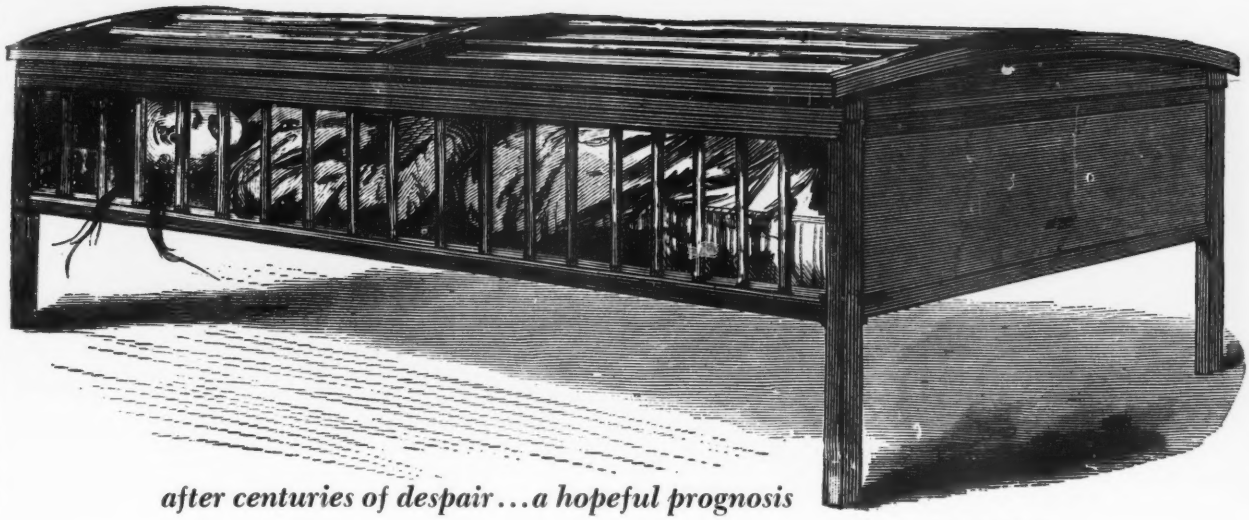

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DISEASES of the Nervous System

A PRACTICAL JOURNAL ON PSYCHIATRY AND NEUROLOGY

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# Psychiatric Treatment in a University Setting

GEORGE C. HAM, M.D.

Treatment is treatment, no matter what the setting. Adequate treatment is an operation compounded of our best understanding of all the factors involved in the illness, adequate facilities and personnel trained to administer to the best of their knowledge to the needs revealed by accurate diagnostic investigation.

With this as a premise and if the fact be accepted that every university strives maximally to meet the criteria, we can turn our attention to those special aspects of the university setting which impinge on psychiatric treatment. In approaching the problem I chose not to list statistics as to age, sex, diagnosis, and method of treatment in our particular university setting, since with minor cultural variations these data are comparable to those in the entire nation.

There are many things having direct bearing on psychiatric treatment in a university setting which are infrequently discussed but are factors of major and sometimes overriding importance in relation to treatment goals. Since my point of view is that of a responsible administrator of such an organization, I will present the problem in our sphere and our attempts at solution.

At the outset it would be useful to establish a frame of reference in terms of the usual university department of psychiatry of this decade to indicate the extent and nature of the demands for psychiatric treatment. Most departments have responsibilities for treatment under the following headings: In-patient and out-patient treatment of both adults and children. There are usually demands for private treatment and non-private treatment. There are both psychotic and neurotic disturbances presented as well as special syndromes, such as alcoholism, addiction, collaboration on forensic problems, student health services, school problems in the public schools and a continually increasing demand for collaborative treatment from the non-psychiatric services such as pediatrics, internal medicine, obstetrics, and surgery. In most states special units such as correctional institutions, hospitals for the mentally retarded, orphanages, county homes, etc., also require therapeutic assistance. These outside demands in themselves represent a tremendous and increasing load on all psychiatric units. I have not listed those forms of indirect psychiatric treatment which also take up a respectable and growing portion of departmental time. These include supervisory and consultation services to innumerable agencies and supporting disciplines such as social work, psychology, nursing, clergy, rehabilitation workers, occupational, recreational and physical therapists and others, all of whom are administering more or less informal psychiatric treatment.

If treatment demands and goals as just described were the only responsibility of a university department, matters would be complex enough in terms of personnel and facilities. However, the problem is not limited to this. Our department could be thought of as a living organism made up of many parts and organs, each of which demanded its own special diet peculiar to its own metabolic need. In many instances that which is growth promoting and stimulating to one part of the organism may be poisonous and detrimental to another. As this type of speculation continued I began to visualize the demand for treatment by ill people as the main body of the organism and that which keeps the whole organism alive. However, it became apparent that there were a

From the Department of Psychiatry, University of North Carolina, School of Medicine.

number of tentacles each seeking its own food attached to this organism, derived from it and important to it, but not necessarily coordinated. This fantasy finally resolved itself into the image of the multi-headed hydra in which the main body of the organism represented treatment demands of the public, but the other multiple requirements, each with its own mouth and special tastes, could be labelled under several headings.

First, and one of the largest among these, could be called the *Educational Maw*. This particular tentacle or mouth of the hydra-like organism is large, has many teeth, and many subdivided heads with highly selective dietary needs. As this special appendage came into focus, there appeared more sharply behind it another mouth, which might be labelled the *Research Engorger*. This particular head has its own peculiar behavior in that it hovers over, around, and under all of the other pseudopods and is rarely satisfied. Frequently, because of its appetite and its requirements for special diet, it produces severe dyspepsia in the central body of the main organism. Immediately opposite these two tentacles are two others which are easily perceived by their size, noise, and voracious appetite. The first of these I have called *Fiscal Sucker* which anatomically is basic to all other heads or mouths since unless it gets its food first the others lose strength and aggressive ability. The fourth portion of this peculiar organism which I have called the *Administrative Revolving Diffuser and Masticator* has the power of overreaching any part of the organism and snatching food from the mouth of any or all others and can actually, if not properly fed, devour one or all, or, as a matter of fact destroy the whole organism. This last portion of the anatomy of our organism represents a most dangerous and insatiable apparatus. It can well be seen that the main body of the organism representing treatment cannot be considered in terms of health and growth without taking into consideration the total organism including the *Educational Maw*, the *Research Engorger*, the *Fiscal Sucker*, and the *Administrative Revolving Diffuser and Masticator*. Normal steady growth and health depend on some type of integration of all portions of the organism. The dominance of any one portion can lead to serious disturbances including paralysis, obesity, marasmus, or to death of the central body treatment.

I would like to direct attention to these four competing parts and discuss some of the components involved. As mentioned, one of the larger of these was the *Educational Maw* with its many teeth and its many subdivided heads and with highly selective dietary needs. Modern departments of psychiatry in universities find themselves faced with the responsibility in education that is unique among other medical departments because of the various levels of education required and the number of different disciplines involved. Most university departments today are in some way or another involved in educational demands in all four years of medicine. This may vary from a few lectures in the preclinical years and relatively limited clinical clerkships to rather extensive, collaborative, and integrated courses in the preclinical years and intense periods of six or seven weeks full-time in each of the clinical years under the direct responsibility of the department of psychiatry. In addition there are teaching responsibilities in collaboration with other clinical departments such as pediatrics and medicine as well as in such functions as general clinics where continuous psychiatric participation in the education is required.

The staffing problem alone to meet such heavy demands, not to mention the need for clinical material for all of these exercises represents a major impingement upon the treatment core. If we pass, then, to the next major responsibility in education, that of formal residency training, which today requires as a minimum an organized and progressive three year program with additional specialization in the form of two years of child psychiatric training, or/and research fellowships for a period of one or two years, our problem becomes even greater. Demands on staff time for an active supervisory and seminar experience and the requirement for primary responsibility by the residents for patients as part of their training requires the handling and organization of treatment to meet this heavy educational need at the same time as fulfilling treatment responsi-

bility. Most of us in universities do not stop even at this level of educational responsibility since demands are made on teaching time by clinical psychologists at three different levels of training, by social work students at two different levels of training, by nurses in the undergraduate school, both in the classroom work and in their actual clinical work, and most recently by graduate nurses specializing in the field of psychiatry.

In addition to this there may be, as in our situation, special programs for the training of social science Ph.D. candidates in the social science of mental health. Additional educational time may be required, as in our situation, by part-time state hospital staff whose work requires supervision, programs for general practitioners, for recreational workers and occupational therapists, etc. Added to this is the demand by outside agencies for consultative work and supervision, the continued education of one's own full time staff, and the special problem when formal psychoanalytic training becomes an additional responsibility of the department or of department members. In the latter special seminars, special supervision, and the requirements of selected cases for the candidates in training, as well as the time required for training analysis increases sharply the personnel time required and places special requirements on the relationship of the department to patients seeking help.

It is quite obvious that the name *Educational Maw* represents an almost insatiable and multi-labyrinthian space that in itself can hardly ever be adequately filled. The conflict between this intense engorging demand and the need for time of personnel to either carry out or supervise adequate treatment can become a matter of major importance.

If we turn to the second of these competing interests, the *Research Engorger,* we find it affecting practically every level and every sub-section and department within the whole organism. Inasmuch as education and research are the unique and primary responsibility of a university, this particular appetite must be adequately fed and pampered or the department has no right to call itself a university department. Since it is essential that such activities go on and since, in part at least, the patients who come seeking treatment become the objects of research studies we immediately have developed the possibilities of an intense conflict. The demands of particular research persons and their wish in regard to the study of patients may be considered by others in the educational sphere as diametrically opposed to the goals of training or of treatment. In addition the time requirements for hospitalization may be completely different when looked at from the view of the patient's treatment alone or the educational interest that the patient presents or the research interest that this patient may present. Here we run immediately into the conflict between the realistic social and financial needs of the patient and the fiscal demands. This is particularly true in relation to the financial cost of prolonged stay for research interests alone. The fact that the educational or research requirements may mean that despite obvious improvement in their condition patients may feel that they are, shall we say, less private than they had expected, and, in fact, may become the object of many people's attention as well as public discussion, represents a still further conflict. We are therefore faced already with the problem of how to make several opposing forces come out with a reasonable degree of satisfaction of all and maintain the primary focus on the treatment of the patient.

These considerations lead directly to a basic and essential problem which I have called the *Fiscal Sucker.* In some way or another all of the demands mentioned above must be paid for, whether it be education, research, or treatment. Each organization and particularly each university has its own fiscal problems and no one feels that this problem has ever been adequately solved. Ideally a university department, to meet the appetites of education and research, would have a fiscal sucker which could be satisfied with practically no food, directly from the patients who participate in either research or educational endeavors. Unfortunately, this is not often the case. Probably this problem comes more sharply in focus in university departments than in non-teaching units, since many financial administrators

find it difficult to think in terms of a teaching hospital having markedly higher costs than a comparable non-teaching and non-research unit. Comparisons are often made between a teaching hospital and a state hospital in terms of the cost per day per patient. Obviously, no such comparison can be made, since the number of personnel and the type of equipment for the whole list of educational and research responsibilities listed above are additional requirements in the university setting. Education of higher administrative bodies such as the legislature is required to separate educational and research costs from treatment costs alone to prevent an unfair and inordinate portion of these expenses from falling on the individual patient involved.

This leads us to the last of the major headings which I wish to mention, namely, the *Administrative Revolving Diffuser and Masticator*. As pointed out earlier and just discussed this particular portion of the organism has the power of overreaching any part of the organism and snatching food from any or all parts. Each university setting has its own particular administrative frame-work. Usually, the head of a department of psychiatry is not only responsible for service to patients, but also for the educational and research aspects as well. This means that he is administratively responsible to both the director of the university teaching hospital and to the dean of the school of medicine. In many instances the school of medicine is but one part of a larger group of health affairs units with an additional administrative director such as a vice president or administrator. This person in turn is responsible to the chancellor or the president of the university and this group, again, is responsible to the trustees. If it is a state institution, the university officials mentioned as well as the trustees are responsible to various administrative bureaus within the state government organization and in the final analysis to the legislature. One can go even further and point out that in addition to these formal administrative relationships there are the less formal but equally important community and state responsibilities of a university department of psychiatry. Among these are relationships to state hospital systems, to the department of welfare, the department of health, the prisons, the courts, corrective institutions, and special hospitals for the mentally retarded, blind, etc.

It does not take a long time to discover that whatever the type of administrative organization one works in there are two opposing wishes basic to the whole operation. The first wish is that the particular unit or units within a university do the best possible job in treatment, teaching, and in research and maintain the highest type of public relations and usefulness. And the other wish, diametrically opposed, is to do this as cheaply as possible. This "never-never" land between these opposing wishes becomes then the problem of the director of a university department. Since the patient and his need fall directly into the middle of this no man's land, the patient is not interested in the details of all the matters described above at all, but is interested in getting well. Yet, in many instances that which is recommended for his treatment alone without the demands of additional educational or research stay presents him with a cost which is in many instances realistically impossible for him to meet because he is in reality paying some of the hidden educational or research costs. This can produce tension and anxiety within its own right, thereby increasing the therapeutic problem. In addition many patients find it impossible to stay the length of time indicated by our best knowledge because of fiscal reasons. This last problem is not unique to university departments and is part of our larger economic difficulty. Since the university department does have demands made upon it which require extended stays for educational or research purposes this additional burden should not be compounded and fall on the patient.

I expect that many of these general problems are familiar to all in similar administrative position. I often refer to the task of solving them as like "wrestling with a swamp." Each approached the problem in a way necessary and feasible to him within the general administrative and cultural framework presented. However, it may be useful to outline some of the methods that have been developed and attitudes and con-

cepts that have arisen out of our own experience in the development of a new university department over the past seven years.

Initially several major policy decisions were worked through and administratively agreed upon. These were that as a university department, educational needs would receive first and highest priority in regard to staffing and time application. Secondly, all patients including private patients would be used for teaching purposes and research goals wherever therapeutically proper and possible. Thirdly, that continuing and major attempts would be made to separate the actual therapeutic costs from those for education and research in the presentation of the budget.

The education of medical students received first priority and was developed as rapidly as possible since it was felt that the problem of emotional and mental illness would require general physicians to be as highly trained in the understanding and function of the psyche as they were of the soma. Residency training would be undertaken only at such time as it was felt that the medical student problem had been at least reasonably organized and was under way. All patients, as mentioned above, both on the in-patient service and in the out-patient services would be used for teaching. As the residency training program developed it was established that all in- and most out-patients would be treated by residents and fellows and supervised by staff. Accommodations were not sold to patients in terms of private rooms or non-private rooms but were assigned on the basis of the need of a given patient.

As the *Educational Maw* grew and began to impinge on the treatment goals an administrative organization was set up that has worked successfully. A staff person was appointed to be responsible for organizing the first year teaching, another for second year teaching, another for third year teaching and another for the fourth year. These persons then constituted an undergraduate education committee with a chairman. Parallel to the directors of the out-patient service and of the in-patient service, child psychiatry, liaison psychiatry, student health, and chiefs of each of the separate in-patient units were appointed. Further groups were set up in a similar fashion with a man responsible for the educational aspects of the first year residents, another for the second year residents, and still another for the third year residents, and a fourth for the child psychiatry training program. A fifth person was responsible for the research fellows.

The members of the staff constituted a graduate education committee and in addition to the residency training program it took responsibility for all other graduate training, such as psychologists, social workers, social scientists, etc. Represented on these two educational committees—graduate education and undergraduate education committees—were members of the service units such as out-patient, in-patient, child psychiatry. The man responsible for the research fellows was made chairman of the research committee with membership of appropriate members of the department interested in various types of research. This covered biological and laboratory research as well as psychological research, in therapy, diagnosis, psychoanalytic investigation, etc. These committees meet frequently to discuss the various conflicts inherent in the demands of each. These smaller committee groups with their responsibility for education, research, or treatment would bring forth recommendations at departmental staff meetings. Over the years it has developed that a monthly meeting of the entire psychiatric full time staff and an additional meeting of the service section heads, such as in-patient, out-patient, child psychiatry, nursing, psychology, social work, occupational therapy, medical liaison, research, etc., were adequate to find constructive solutions to the problems. This form of delegation of clearly identified responsibility and the opportunity for open discussion has gone a long way toward solving most of the problems.

However, it became apparent that fiscal and administrative complications were growing at a pace that required additional solution. Although the structure described had relieved the chairman of many details related to conflicts of education, research, and treatment, the problem of finances, and administrative relationships with the larger

units of the medical school and the hospital remained. These came to be so time consuming in terms of unavoidable negotiations and paper work that a state of what I often refer to as "chronic everything-itis" was in full bloom. To deal with this situation the hospital director and the chairman of the department worked out an arrangement to permit the hiring of a unit manager responsible to both for fiscal and management affairs. Final decision remained with the head of the department and the hospital director, but multitudinous details having to do with finances and operation were removed to this officer's responsibility. This unit manager immediately began to function as a member of the major educational, research, and service committees and the final step in the integration of the various competing pseudopods began.

A last device was the appointment of an executive assistant to the head of the department who would take over all administrative responsibility for all activities within the department. He would deal with the coordination of various committees, problems of personnel, coordination of teaching, research, and treatment demands and would meet with the chairman of the department and the unit manager at regular intervals to review major policy decisions which would then be implemented by the executive assistant and the unit manager. This freed the head of the department for those administrative functions which have to do with major administrative relationships within the hospital and medical school and with the higher officials of the university and the legislature as well as with state and national organizations.

I hasten to point out lest there be misinterpretation that these techniques and methods by no means have produced a state of nirvana. I do say, however, that the techniques used have addressed themselves to the problems and have in large measure made possible rational and democratic if not immediate methods of working toward compromise solutions.

My thesis is that treatment in a university setting cannot be discussed as an isolated phenomenon. The public should expect and receive the most adequate treatment that is possible from a university department. Competing forces, however, of education, of research, and the special problems of fiscal support and administrative relationship to the rest of the hospital and medical school and to the other agencies of the university and the state overlap in ways which can militate against the best therapeutic endeavor and result. I have attempted to isolate some of these inimical factors and to suggest ways of approaching a solution which we have used and which have been in the direction of maintaining the highest possible therapeutic goal without reducing the educational and research potential and at an expense to the patient which represents their actual share in the cost of their treatment. In all candor I must say that this last problem remains the least satisfactorily solved aspect of the entire situation. This is understandable in view of the fact that we are a state university supported by and through the legislature and yet by cultural demand are required to deal with indigent patients as well as patients with considerable means. The difficulty presented by the high cost of medical education and research are naturally disturbing to decision making bodies and continued education and assistance by those of us in the field will be required to help legislators and bureau administrators see the need for additional support of the educational and research costs of university teaching hospitals and thereby reduce the financial load on the individual patient. I am sure that with aggressive patience we can move toward a solution of this problem and thereby improve this aspect of the therapeutic milieu.

# Role of Anxiety and Tension in Insomnia

OSCAR ROZETT, M.D.

In a psychiatric hospital insomnia is an ever present problem. It is essential to good psychotherapy that normal sleep patterns be established. Hypnotics of all kinds have been used to induce sleep. If sleep comes within an hour of the administering of a hypnotic it is deemed effective for the control of "getting to sleep" difficulties. Tranquilizers have been shown to reduce the insomnia problem and to reduce the need for hypnotics.

While hypnotics have been useful to induce sleep, it is difficult to enlist them in aiding to span the "sleeping hours." Short-acting drugs allow midnight or morning wakefulness, while long-acting agents cause morning hangover.

There is no reason why one should not awaken during the night provided sleep soon again returns. The usual block to the return to sleep is anxiety. Anxiety is best prevented by a tranquilizer. From this reasoning it would seem logical to combine a tranquilizer and a hypnotic to induce sleep. The tranquilizer would reduce the difficulty in getting to sleep and would decrease the amount of hypnotic required. A tranquilizer would be ideally suited for extending sleep since no hangover would be produced, and anxiety, the prime factor in midnight and early morning insomnia, would be controlled. The individual would face the morning rested and tranquil. Thus, he would be better prepared to cooperate in the normal activities of the hospital or home scene and be more responsive to the approaches of the psychiatrist.

Such a combination in tablet form* was made the subject of the present study. For sleep induction the tablet releases secobarbital 60 mg. potentiated by 25 mg. of phenyltoloxamine. Approximately two hours later, for sleep maintenance, the tablet releases an additional 75 mg. of phenyltoloxamine.

Secobarbital is a recognized, safe, short-acting hypnotic. The amount used in this combination would be considered low for the normal individual, and in the mentally disturbed patient extremely conservative.

Phenyltoloxamine, a safe non-phenothiazine tranquilizer,[1,2] was chosen for its reliable calming effect on motivational anxieties. Its particular merits in allaying anxiety have been well documented by Sainz,[3] who found phenyltoloxamine to be superior to phenobarbital and meprobamate.

**Clinical Observations:**

In an initial series, 172 tests were carried out in 45 unselected psychotic patients. These patients ranged in age from 21 to 78 years. There were 11 males and 34 females. During the 172 trials, 152 were given one tablet, 17 two tablets, and three took three tablets. In this study we found that one tablet produced sleep in less than an hour in 67% of the trials. In 88% of the trials the sleep was longer than five hours. The benefits of the medication were not remarkably increased with greater dosage. Our study also demonstrated that three tablets could be administered without producing untoward reactions. Some patients who had previously been on heavy doses of other hypnotics slept for only a short time on one tablet of the combination. That patients may be habituated to other hypnotics is, of course, a complicating factor when the psychiatric milieu is used for this type of study.

In a second series 21 males and 46 females were studied. The age range was 17 to 78 years. The diagnoses were as follows:

Manic depressive manic—1
Manic depressive mixed—1
Manic depressive depressed—4
Schizophrenia simple—1
Schizophrenia acute undifferentiated—5
Schizophrenia paranoid—10
Psychotic depressive reaction—13
Involutional psychotic reaction—21
Psychoneurosis with depressive reaction—2
Psychoneurosis associated with Reynaud's disease—1
Chronic brain syndrome with cerebral arteriosclerosis—3
Acute brain syndrome associated with alcoholism—2

From Fair Oaks Hospital, Summit, New Jersey.
*Supplied as Hyptran by Wampole Laboratories, Stamford, Conn.

In this series we wanted to determine the ability of this medication to repeatedly suffice for the treatment of insomnia. Thirty of the patients were placed on one tablet and 37 of the patients were placed on two tablets of the medication at bedtime. The average time required for sleep was 56 minutes; the average duration of sleep was 7½ hours. Each patient received the same dosage for four consecutive nights. Thus the total number of drug tests (instances) was 268. If the patient failed to go to sleep or if sleep failed to continue throughout the night, a repeat dosage of one tablet was given. The number of instances in which repeat doses were required was 24 (under 9%) and 22 of these repeat doses induced a good night's sleep. Only four (less than 1.5%) instances of complete failure to induce sleep with this medication were observed.

### Side Effects:

One patient who had two tablets complained of being dizzy and unsteady in the morning. One patient on a single tablet complained of blurring of vision in the morning. One patient receiving one tablet on retiring and a repeat at 1:00 A.M. fell out of bed. Of the patients receiving two tablets and a repeat of two tablets on awakening, only one complained of feeling groggy in the morning. One patient who received two tablets in the early evening, two on retiring and another repeat at 2:00 A.M. obtained little sleep and complained of morning hangover.

### Summary:

An average of 7 out of 10 psychiatric patients with insomnia were effectively controlled by one or two tablets of the anxiety-reducing and hypnotic medication described here. In the psychiatric situation the control of this number of insomnia patients successfully with a medication through successive nights without incidence of serious side effects and with a low incidence of morning irritability and hangover is noteworthy.

Further studies with this medication are warranted, and while our results are favorable for the psychiatric situation, the results for the treatment of insomnia in the general population should be even more favorable.

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# Extrapyramidal Symptoms of Trifluprom azine, Mepazine, Prochlorperazine

HARRY F. DARLING, M.D.

Opposite autonomic effects of mepazine, as distinguished from chlorpromazine, were noted by Bowes.[1] He added chlorpromazine to the mepazine to eliminate the parasympathicolytic effect of the mepazine. Feldman and Braun[2,6] noted that parkinsonism was eliminated in their series of patients on chlorpromazine and mepazine in combination. Parkinsonism was controlled in certain patients on treatment with perphenazine.[3] It seems well established that mepazine is predominantly vagolytic in its action.[1,4,5] Prochlorperazine, like other perphenazine-phenothiazines, seems definitely to be sympathicolytic in its action and in its use the clinician is beset often times by cases with extrapyramidal symptoms, especially parkinsonism and akathisia. The symptoms cannot be controlled adequately with methane sulfonate or procyclidine hydrochloride and, even if controlled, in many cases the dosage cannot be raised to give adequate ataraxis.

On the assumption that prochlorperazine was a sympatholytic drug and mepazine a parasympatholytic one the combination was given, in various dosages, to 40 patients who could not remain on prochlorperazine in doses sufficient to stabilize them psychiatrically due to severe extrapyramidal side effects. The dose of prochlorperazine was cut approximately in half and two times the dose of mepazine added. The reasons the patients could not continue on the prochlorperazine were parkinsonism in 25 cases (62.5%), akathisia in eight patients (20%), combined parkinsonism and akathisia in three patients (7.5%), dysphagia in three cases (7.5%), and one patient who had opisthotonos (2.5%). Once stabilized as to both ataraxis and side effects, the average patient was receiving doses of 91 mg. of mepazine and 46.5 mg. of prochlorperazine daily. None of the patients were receiving less than a 1:1 combination of the two drugs nor more than three times as much mepazine as prochlorperazine. No anti-parkinsonian agents were used. Similar results have been obtained in nearly a hundred other patients who developed severe extrapyramidal symptoms with perphenazine,[3] fluphenazine, reserpine and thiopropazate.

Diagnostic classification of the 40 patients receiving mepazine-prochlorperazine therapy was as follows: 25 patients (62.5%) were schizophrenic; seven (17.5%) were mental deficients with psychosis; five (12.5%) had manic depressive psychosis; two (5%) had chronic brain syndrome, and one (2.5%) had involutional psychosis.

Once stabilized on the prochlorperazine-mepazine combination, equivalent doses of trifluprom azine were substituted, the average dose of the latter drug was 228.4 mg. daily. Three cases had to be removed from the trifluprom azine and reinstituted on the combination of drugs due, not to extrapyramidal symptoms, but to depression. One of these patients, classified manic-depressive psychosis, manic type, developed her depression in three days; she had also, in former attacks, the depressed type of that psychosis. Another, mental deficiency, mild, with psychosis, developed her depression in two days; her psychosis was schizophrenic-like in nature, not affective. The manic-depressive patient had had akathisia on treatment with prochlorperazine, while the mental defective had had akathisia and parkinsonism. The third patient, diagnosed manic-depressive reaction, mixed type, had had her depression relieved by prochlorperazine but developed akathisia which was relieved by the substitution of three times the dose of mepazine for half her prochlorperazine; she became very depressed on trifluprom azine.

Six patients out of the forty, when shifted from the prochlorperazine combination to the trifluprom azine, developed such severe parkinsonian symptoms that they could not tolerate the latter. Five of them developed

From Danvers State Hospital, Hathorne, Mass.

severe parkinsonism but no akathisia; on prochlorperazine, before combination with mepazine, three had been parkinsonian, two had had parkinsonism with akathisia, and one had both. The sixth case had dysphagia on prochlorperazine alone, but on combined therapy it was relieved temporarily.

Her diagnosis was psychosis with mental deficiency, idiopathic, severe, and she had the second largest dose of the group; prochlorperazine 150 mg. daily and mepazine 300 mg. daily. She was not improving even on this high dose. Ataractically her equivalent dose of trifluprομazine would have been 600 mg. daily, but she was started on 400 mg. to be on the safe side. She went along for a few days and her mental condition improved dramatically, then she developed dysphagia again; she has maintained her improvement, but on a mepazine-trifluprομazine combination of 300 mg. daily of each drug. Four cases (10%) developed milder, controllable parkinsonism. Two cases (5%) became lethargic after the trifluprομazine was substituted; in both cases the lethargy was controlled by reduction of the trifluprομazine, without retarding improvement.

Of especial interest was the incidence of depression, especially as in none of the 40 cases was mepazine combined with the prochlorprομazine because they became depressed with the use of the latter alone. In cases that developed depression with prochlorprομazine (or any other perphenazine-phenothiazine for that matter), we use mepazine only and the other phenothiazine is completely discontinued. Three manic-depressive, depressed type, patients improved following the substitution of trifluprομazine. Two manic-depressives, one manic type and one mixed type became badly depressed, as did a psychotic mental deficient. The involutional depression also improved. One would have expected the depressed manics and the involutional to get worse, and the mental deficient (who had schizophrenic-like features rather than affective ones) and the manic and possibly the mixed manic-depressive patients to maintain their improvement on trifluprομazine, if there is any correlation between the parasympathicolytic effect of mepazine and its particular usefulness in depression,[1] conversely the propensity of the other phenothiazines, including trifluprομazine, would be to have as side effects both sympathicolysis and depression.

Of interest also is the highest dosage in the series. In this patient (classified mental deficiency, mild idiopathic, with psychosis), the side effect of parkinsonism and akathisia on prochlorperazine were controlled with mepazine and her dosage was run up to 300 mg. of prochlorperazine and 200 mg. of mepazine daily. Even at this dose psychiatric improvement did not occur. She was started on 900 mg. of trifluprομazine daily, and eventually run up to 1200 mg. She did not improve; however she had no side effects.

Average maintenance dose in the 31 patients continued on trifluprομazine was 219.1 mg. daily. Their psychiatric condition did not change materially, except for one that got considerably worse, although minor adjustments in dosage were occasionally necessary, both up and down.

### Case Reports

1. This patient, 31 years of age, had a history of manic-depressive reactions. When she was 24 she had the depressed type of that psychosis, recovered, and three years later had a manic attack. For the present attack, manic in type, she was given prochlorperazine and, although she improved as to her psychosis and was no longer euphoric or hyperactive in speech, she developed extreme akathisia not controllable with methane sulfonate. Dosage was accordingly reduced to 100 mg. daily and 150 mg. mepazine added. Within two weeks it had to be reduced due to nasopharyngeal dryness and blurring of vision. Akathisia did not recur and patient maintained marked improvement. The two drugs were then substituted for the trifluprομazine 400 mg. daily. In four days patient became extremely depressed and trifluprομazine was necessarily discontinued. Previous treatment was reinstituted and patient recovered.

2. This 29 year old patient, a chronic catatonic refractory to previous chlorprομazine treatment, became akathisic on 150 mg. prochlorperazine. Methane sulfonate improved but did not eliminate this symptom. Dosage of prochlorperazine was cut to 75 mg. daily and 150 mg. mepazine added; the methane sulfonate as in the rest of this series was eliminated. She was stabilized psychiatrically on the combination and transferred from a disturbed to a paroled ward. For the combination trifluprομazine 400 mg. daily was substituted and improvement has been maintained four months. Daily dose of trifluperazine is now 300 mg.

3. This 50 year old, chronic, violent, disturbed schizophrenic had not previously been medicated in

the hospital. On 100 mg. daily of prochlorperazine she did not improve, so the dosage was increased to 150 mg. daily. Extreme, uncontrollable parkinsonism developed. Dosage of prochlorperazine was cut to 75 mg. daily and 200 mg. mepazine added, later cut to 150 mg. daily. Patient achieved and maintained moderate improvement on the combination without extrapyramidal symptoms. Improvement was maintained four months after medication was switched to 400 mg. triflupromazine daily.

4. This 44 year old depressed manic-depressive, in whom shock treatment was contraindicated for medical reasons and who had been refractory to treatment by reserpine, chlorpromazine and perphenazine developed severe akathisia on 100 mg. daily of triflupromazine. A combination of 50 mg. prochlorperazine and 150 mg. mepazine was used, the latter reduced to 75 mg. daily because of dry nasopharynx. Only minimal improvement was noted. Mepazine could not be increased due to its side effects and probably would have been the treatment of choice considering the diagnosis. For the combination trifluprazine was substituted. Patient improved moderately over the next four months.

## Conclusions

(1) Mepazine in combination with other phenothiazines (prochlorperazine, perphenazine, fluphenazine, thiopropazate (and reserpine) is effective in stabilizing the autonomic nervous system in cases that show severe extrapyramidal side effects. Its effectiveness exceeds by far such anti-parkinsonian preparations as methane sulfonate and procyclidine hydrochloride.

(2) From the limited group of patients having affective psychoses in this series, it can be tentatively concluded that the parasympathocolytic effect of mepazine is not necessarily correlated with its particular usefulness in affective disorders, and that the sympathicolytic and depressive side effects of other phenothiazines are also not necessarily coincident.

(3) In 40 cases, in which mepazine had been used in combination with prochlorperazine to counteract severe extrapyramidal effects due to the latter, trifluprazine was substituted for the combination. Three patients (7.5%) developed severe depression. Six patients (15%) developed severe extrapyramidal symptoms. These patients could not be continued on trifluprazine. Of the remaining 31 patients (77.5%) who were continued on trifluprazine, four (10%) developed milder, controllable parkinsonism and two (5%) developed lethargy which was controlled by reducing the dose; of these 31 patients, improvement was not significantly altered, except that three patients (7.5%) with affective psychosis improved. It may therefore be concluded that trifluprazine compared with prochlorperazine is less likely to cause extrapyramidal side effects.

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*Author's Note:* Trifluprazine used in this study was supplied by E. R. Squibb and Sons under their tradename "Vesprin."

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# Medico-Legal Aspects of Electrostimulative Therapy

JOHN D. MORIARTY, M.D., and ARMOND M. JEWELL, LL.B.

In the last ten years there has been a sharp increase throughout the country in the incidence of suits by patients against physicians alleging malpractice. In some sections particularly, the psychiatrist has been plagued by such litigation, very frequently with reference to some form of electric treatment. Since both convulsive and non-convulsive therapies are to be considered, the broader term of electrostimulative therapy is used, although most discussions in the literature refer to "electroshock" therapy. As a related part of the general problem the matter of intravenous anesthesia and the use of different muscle relaxant drugs will be considered.

According to Regan,[1] malpractice is defined "as a failure upon the part of a physician (or dentist) properly to perform the duty which devolves upon him in his professional relation to his patient, a failure which results in some injury to the patient. Thus, malpractice has two essential parts to it: 1) that the physician fails to do his duty; 2) that definite injury to the patient is a result of this failure."

As Regan points out, the physician's duty arises as a matter of law out of his relation with the patient and the duty requires that the physician undertaking the care of the patient possess and exercise that reasonable and ordinary degree of learning, skill, and care, commonly possessed and exercised by reputable physicians practicing in the same locality, or in similar localities, in the care of similar cases.

In the words of Davidson,[2] "civil malpractice is a negligence, carelessness, incompetency, or malice by a physician which results in damage to a patient." In legal terminology civil malpractice is a "tort," meaning a wrongful act. Malpractice may consist of an act or acts of commission or of omission. There is always the implication that the doctor did something wrong or that he negligently failed to do what was right.

A specialist is judged by higher standards than a general practitioner when it comes to the practice of his specialty. Nevertheless it is not required that he be infallible but simply that he meet standards of knowledge, care, and skill possessed and exercised by similar specialists in his community.

As regards EST, it is obviously necessary to make a proper examination before initiating treatment. However, it is always a question how extensive the physical and laboratory studies should be. Most psychiatrists to whom a patient is referred by internist or general practitioner, advised of the results of adequately performed studies, would probably feel secure in not repeating those examinations themselves. Routine pretreatment workups involving special procedures as electrocardiogram would certainly not be necessary in every case, unless it were the commonly accepted practice in the particular community where the psychiatrist was located.

A very important pretreatment procedure is to obtain a written consent to treatment. In the case of patients who are committed by court to a psychiatric hospital, it is usually sufficient to have the responsible relative sign the consent. In voluntary patients, the patient should always sign, and if there is any question of his competency the next of kin should sign also.

Adequate explanation should be given the patient of the nature and extent of the treatment and a general idea of the risks involved. Impastato[3] states that sometimes he has only the relatives sign and does not tell the patient that he is to receive an electroconvulsive treatment. While this is doubtlessly done for humanitarian reasons, to spare the patient apprehension, it seems to us very dangerous indeed from a medico-legal standpoint, as Siegal[4] discusses.

The following is a practical form of consent:

"I hereby give permission to Dr. John D. Moriarty, and/or any associate physician, to administer a series of electrostimulative treatments (called by some physicians "electroshock treatments"). The nature and possible complications of the treatments

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have been explained to me. I understand that they are usually administered under Sodium Pentothal or Surital anesthesia."

It is unwise and impossible to list every conceivable complication just as it would be in the case of a surgeon's describing the hazards of a gall bladder operation. However, following a lawsuit in which the question was raised by the plaintiff of being inadequately informed of possible complications prior to EST, Rodis and Groh[5] have prepared a rather elaborate information sheet attempting to do just this. The patient and his family are required to acknowledge this along with signing the consent form. Considering the fact that literally more than a million electroshock treatments have been given in the United States since 1940, we feel that this is unnecessary from a legal standpoint and undesirable from a therapeutic point of view.

An initial decision is whether to proceed with office treatment or give EST at a sanitarium or hospital. From the medico-legal standpoint the answer would depend in some part on how extensive the use of office EST is in the community where the psychiatrist is practicing. Assuming that he is not alone in the use of an office setting, it is incumbent upon him to have adequate equipment on hand at all times, which incidentally may often be superior to that found in the average sanitarium. The third question is the matter of proper assistance in giving the electric treatment. Some psychiatrists are so cautious that they feel that they have to have an anesthesiologist on hand to administer the Pentothal and the succinylcholine (SCC), whereas others give the electric treatment (presumably without SCC) with no assistance whatsoever. In our opinion the presence of one adequately trained and experienced assistant is sufficient, particularly if a second assistant is within immediate call.

In EST the first question would involve whether valid consent has been obtained. Then in the case of a committed patient there is always the possibility that he might later bring suit, as did one paranoid patient who had been committed to a state hospital in Michigan. He alleged felonious assault by the superintendent of the hospital and by the treating physicians. Ordinarily, if the commitment proceedings were in order, the suit would probably be dismissed.

Obviously the principal basis for suits in connection with EST would arise if there were any complications. Without describing these in detail, it may be mentioned that fractures, particularly of the vertebral bodies and sometimes of the long bones, have been the most common complications of EST, at least prior to the use of SCC. The most startling complication, of course, is sudden death, as from respiratory failure or cardiac arrest. As with anesthetic deaths, these are often difficult to explain satisfactorily but do occur occasionally despite the best care and skill on the part of the treating physician.

In order to be successful in a suit the plaintiff must prove his case by one of the following methods: 1) a self admission by the defendant physician that he was negligent; 2) expert medical testimony on behalf of the plaintiff establishing a basis for the malpractice contention; or, 3) application of the legal doctrine of "res ipsa loquitur." The first two bases are more or less self-evident, but the doctrine of "res ipsa loquitur" requires explanation. It is only in recent times that this doctrine that "the thing speaks for itself" has been held applicable in the malpractice case. Generally the proof of a physician's negligence must be established by the testimony of expert medical witnesses. As Regan points out, however, the application of the doctrine of res ipsa loquitur:

"creates in the case an inference of negligence on the part of the defendant; it relieves the plaintiff of the necessity of proving the alleged malpractice by testimony of medical experts; it places on the defendant the burden of making explanation to offset the inference of negligence; and by the majority rules the question is created for the jury, regardless of any and all evidence presented by the defendant."

Ordinarily this doctrine has been held applicable in the malpractice field chiefly in such types of cases as 1) foreign bodies left in the tissues, such as a sponge after operation, 2) burns from a hot water bottle, hot lights, or electric machines, 3) infection through the use of unsterilized needle or instrument, etc. In other words, the doctrine applies in medical malpractice cases only

where a layman is able to say as a matter of common knowledge and observation, or from the evidence can draw an inference, that the consequences of professional treatment were not such as ordinarily would have followed if due care had been exercised.

Some courts have, in recent years, extended the doctrine to include many cases where an untoward result occurred, such as paralysis developing after a spinal anesthesia, even though no specific act of negligence was alleged or proved. This extension of the doctrine seriously threatens the development of new procedures in medicine and psychiatry and even the utilization of well established treatment methods, because the physician can never be sure when some unfavorable complication may result.

There have been court decisions favorable to the psychiatrist where a major complications, such as fracture of the hip, occurred during treatment. Regan quotes the Supreme Court of Tennessee, in the case of Quinley vs. Cocke,[6] as follows:

"After the second treatment when the patient regained consciousness there was complaint of pain in the right hip and thigh. An x-ray taken two days later revealed a fractured hip. It appeared that the plaintiff knew the defendant was going to administer electric shock treatment and that the effect would be to throw him into a convulsion and he knew that such treatments are very strenuous. The Supreme Court upheld a directed verdict for the defendant physician and in considering the case said that if the rule of 'res ipsa loquitur' were applied in cases of this kind the physician and surgeon would always be in fear of the results of scientific treatment knowing that he might have to defend his professional reputation in open court."

A similar case was decided in favor of the defendant physician, in the matter of Farber vs. Olkon,[7] by the California Supreme Court, in which a young man suffered a bilateral fracture of the femora following electroconvulsive treatment, with resultant permanent crippling.

A few brief situations of potential hazard may be mentioned. For example what would be the medico-legal position of a physician using SCC for ECT in a sanitarium where oxygen was available but without proper equipment for administering it under positive pressure? What is the position of a physician who administers ECT without adequate premedication of atropine, considering the extensive work that has been done to show how atropine reduces the complications of this treatment? Also, will it not be harder for a physician to defend the allegation of malpractice in the case of a serious fracture if he has failed to use a proven efficient muscle relaxant drug such as succinylcholine? What is apt to be the medico-legal position of a psychiatrist who is the first to use a new and potentially hazardous procedure, such as, for example, unipolar electrocoma therapy?

## Summary

Malpractice involves: 1) failure of the physician to perform his duty to exercise proper care and skill in the treatment of his patient, judged by prevailing standards of care in his community, and 2) definite injury resulting to the patient from such failure on the part of the physician.

In the case of EST, proper pretreatment history and examination are important, along with the use of modern techniques of electrotherapy and modern safeguards. Obtaining a valid consent from voluntary patients is necessary, and the same from the responsible relative of committed patients.

The basis for suits for malpractice in connection with EST usually involves complications of the treatment. Ordinarily, malpractice must be proved by 1) an admission by the defendant physician that he was negligent; 2) expert medical testimony for the plaintiff to establish the basis for the malpractice contention; or, 3) application of the legal doctrine of "res ipsa loquitur."

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(J.D.M.) 7046 Hollywood Blvd., Los Angeles 28, Calif.

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# Post-Graduate Pastoral Counseling Seminars

E. ADAMS DANEMAN, M.D., and JOHN I. SMITH, B.D., S.T.M.

Many psychologists and psychiatrists have been confronted by troubled ministers who wished to make sure that they did not err in talking to mentally disturbed persons. In many such instances the minister would not proceed without the scientist's approval.

Referral of a patient to the privately practicing psychiatrist is frequently arranged by the minister. Because of this there has arisen a need for psychological training for the minister, that he might have scientific guidance for his counseling, and that he might also know when to refer a parishioner for advanced care. There is a clear need, as expressed by Dr. R. F. Gayle, Jr., then president of the American Psychiatric Association, for the clerical and psychiatric professions, ". . . to move gradually from a status of peaceful co-existence to one of active cooperation."[1] This expression evidences a general recognition, both on the part of the clergyman and the psychiatrist, that they have too long been working toward the same goal without significant liaison. Towards this end of greater liaison, endowed chairs of Pastoral Psychology have been established or planned in leading seminaries such as Andover Newton. Recently, the National Academy of Religion and Mental Health, was also established.

Questions remain: What is Pastoral Counseling and how does it differ from intensive psychoanalytic psychotherapy? Is it possible for the two to proceed at once? Does the working together necessarily involve a compromise of principles on the part of either the clergyman or the psychiatrist?

### The Worcester State Hospital

Historically, the Worcester State Hospital has been prominent in its endeavors to seek some solution to the above questions. In 1924, Dr. Anton T. Boisen was appointed as the permanent Protestant Chaplain at this hospital. His interest in the field followed a deep emotional struggle which had led him into a mental hospital as a patient. In wrestling with his own mental problems, he came to this definite conclusion, evidenced in a letter to a friend: "I feel that many forms of insanity are religious rather than medical problems and that they cannot be successfully treated until they are so recognized!"[4]

With this conclusion firmly entrenched in his thinking, Dr. Boisen enrolled for special work in the Andover Theological Seminary and the graduate school of Harvard University. Upon completion of this preparatory work, he sought a position as mental hospital chaplain. He discovered that no such position existed, nor was there evidenced any desire to create one.

However, after some time, he discovered in Dr. William A. Bryan, then superintendent of the Worcester State Hospital, a man eager to test any promising new ideas. Thus came Dr. Boisen's appointment to the hospital. The presence of a chaplain in the hospital soon was realized as a very positive step. Dr. Boisen's first effort was a research project to determine to what extent religion is involved in mental illness. The result of this project is recorded in his book, *The Exploration of the Inner World.*

In 1925, as a new experience in theological education, seminary students and clergymen worked as attendants in the hospital, and were also led in seminars by various staff members. In the annual reports of the superintendent, from 1925-1930, there appeared to be a good working relationship between the psychiatric staff members and the chaplain's training program, even to the degree of semi-weekly conferences held by the medical staff for the seminary students.

The work of Dr. Boisen began to expand and attract the attention of more people. For some time before leaving Worcester, he taught for three months of each year at Chicago Theological Seminary. With Dr. Lewis B. Hill he offered a seminar course in psychopathology at Boston University School of Theology. Lectures were given at a number of other seminaries and papers read at conferences. Dr. Boisen also published a number of articles in the various medical

From the Clinical and Research Services and the Office of the Protestant Chaplain, Worcester State Hospital, Worcester, Massachusetts.

and religious journals. He was pioneering in this field, in an effort to show that the clergyman and the psychiatrist not only could, but should, work together.

In 1930, Carroll Wise, one of Dr. Boisen's former pupils, was appointed Protestant Chaplain at Worcester. The work continued to grow with more and more seminary students seeking admission for the clinical training program. Wise also taught courses in Pastoral Psychology at Boston University School of Theology. He published books in the field of Pastoral Counseling. In cooperation with hospital physicians, a number of seminars were made available to the local ministers of the community. The chaplain was accepted as a member of the staff with a specific function to perform.

The work of these two men, at this hospital, paved the way for a good working relationship between the chaplain and other members of the staff. The acceptance of theological students and clergymen as a part of the teaching program at the Worcester State Hospital is now part of its tradition.

The writers of this paper felt that in addition to the seminary program, seminars should be offered to the practicing ministers of the area. With the approval of the hospital administration and the Greater Worcester Council of Churches, Inc., it was decided to promote and carry out the Worcester Area Post-Graduate Pastoral Counseling Seminars. It is to the mechanics of these seminars that we now turn.

### Method of Approach

During the first year of our operation an informal group was taught by the Protestant chaplain. The teaching during this time began with a consideration of the instincts and only later turned to ego psychology and ego defense mechanisms. We have only to look back to the experience of Sigmund Freud in Vienna to see what happens when people are confronted with theoretical formulations in regard to unconscious impulses and the richness of instinctual life.[5] The initial mistake which the leaders of this seminar made was similar. By beginning with instincts and unconscious conflicts as they are related to symptoms, we had initially ignored the way in which the ego, in particular the ego of the adult person, deals with these situations. I believe that, without meaning to, the first group of ministers were given an impression, that the human being was another animal with perhaps a slightly more complex instinctual life.[6] The clergy, offering ways of dealing with regulated instincts (the Ten Commandments, for example), was made anxious and at times panicky, and assumed that the psychologist thought of human existence merely as a time in which the expression of every instinct must be met.

Beginning with the second year, at which time some of the members of the original group returned, the seminars began with talks designed to build up, from observations of children of different ages, a general psychoanalytically oriented theory which stressed first the ego and its mechanisms of defense. During the second year none of the anxious moments were felt to the same degree. We had said to the ministers, in effect, that we recognized and respected the ways in which human beings control themselves and find a proper place and time for the expression of their needs. In a sense this has implied a respect for the teachings of the church and has gone a long way toward tearing down the notion of some of the ministers that the psychiatrist "is only interested in sex." With a background of ego defenses and psychological development they were then able to consider the strivings of the *id* and their relationship to the healthy *ego*. As we talked about the way the *ego* expresses, sublimates, denies and projects needs of the instincts both the ministers and the psychologists involved, came to have a much more healthy respect for each other as well as for the inner workings of the human personality.

With the second year the Worcester Area Post-Graduate Pastoral Counseling Seminars came under the official sanction and "joint auspices" of the Greater Worcester Area Council of Churches, Inc., and the Worcester State Hospital. This joint participation became more than official sanction. It progressively involved more and more active cooperation. A letter was prepared by the Council of Churches and sent to the ministers in the central Massachusetts area. In response, 36 applications were received. From the original 36 applicants a group which attended

consistently was formed. A large percentage of this group missed no more than one session during the year. The majority of the Protestant denominations were represented on the local level. Baptist, Methodist, Congregationalist, Universalist, Presbyterian, Episcopalean, and Lutheran.

Joint auspices to the potentially participating ministers apparently meant acceptance of the Council of Churches, and when this acceptance became a reality, several of the clergymen who had previously been reluctant, now readily approved participation. The Hospital Chaplain, who was additionally a practicing parish minister in the area, was present during each seminar at which the psychiatrist led the discussion. His role in silently supporting the psychiatrist should not be underestimated. When the chaplain led the discussion the psychiatrist was likewise present.

A brief perusal of the scheduled seminars reveals that the early sessions were concerned with an observational construction of general developmental theory viewed from a psychoanalytical background. The discussion of the infant seemed especially appropriate; most of the ministers have families and children. The reaction of the infant, his needs, his frustrations, his ways of dealing with his environment were outlined. Some of the theoretical notions in regard to the development of schizophrenia were outlined.

Contiguously, the period of toilet training was discussed, with the various ways of affecting it, the attitudes of the parents involved, and the child's reaction to these events. The obsessive-compulsive personality structure, which might be formed during this period, was outlined, along with an idea of the treatment.

The Oedipal complex, its meaning, its effect on growth and maturation, its ways of resolution, and its significance for adults, was discussed. Something of the theory of hysteria was brought out here. A discussion of orality in the hysteric was logically presented. The ministers were encouraged to participate by culling from their experience instances which might more firmly fix some of the theoretical concepts in their minds. The period of latency was considered at length, largely through the ministers' community involvement and their constant opportunity to observe boys and girls of that age. Learning, repression, and sublimation were here fully discussed. Puberty, its psysiological and psychological meanings, and its relationship to earlier periods of development, was studied. The difference in maturation of the male child and the female child was examined. Much time was given to the discussion of adolescence, and again many of the ministers could draw on their own experience for observations. It was felt that the best possible grounding in reality problems might be obtained by using this type of inductive theorizing, or teaching by experience. Late adolescence and adulthood were examined somewhat more briefly.

Following this observational approach to some of the psychoanalytic notions of development, the "topography of the mind"—in terms of the *ego, super-ego,* and the *id,* was discussed. Particular emphasis was placed upon the ego's somewhat central position, and the relationship of the various faculties of the mind to the reality of the outside world.

Next was presented the ego and its mechanisms of defense. Not wishing to repeat the error of the first year, more time and emphasis was placed, not upon the instincts essentially, but upon the instincts as they are regulated, expressed and controlled by the ego. It was here that the first example of an ego defense was introduced. The mechanism of denial, though one of the more primitive ego defenses, seemed a fitting illustration when considering the ministers' constant involvement in mourning and other serious loss reactions, in many of which instances denial of loss had been evident to the clergyman. It was stressed in the discussion of the uses of denial that there could be certain cases, usually emerging out of more chronic situations, in which gains to the ego might result through its application. For example, the way in which the denial of a sudden death could protect the ego against an immediate cataclysmic shock was discussed. It came to the mind of several participants that many laymen, when seeing an apparently unshaken relative standing at the grave of a dearly loved person, would utter this remark, "Still water runs deep."

The processes of repression, forgetting, and other influences upon unsolved residual conflicts, were next outlined. Regression and projection were then considered. It was observed that the projection of responsibility may save a faltering ego from the brunt of personal responsibility and consequent depression. The ego state of depression and the treatment of the paranoid were outlined. Later, replacement, substitution, and sublimation were brought to discussion. The niceties, nuances, and, as one of the ministers offered, beauties of the process of sublimation were lengthily brought to light. The complexities of the human mind seemed to many of the ministers a further testament to the glory of God.

Following these topics the schizophrenic, the manic-depressive, and involutional reactions were outlined. It was gratifying to note that the language of the psychiatrist had become familiar enough to the ministers so that constant definitions were no longer necessary. The ministers were able to offer innumerable examples from personal experience for the elucidation of the theoretical aspects of the discussion.

Several weeks were devoted to the joint study of loss reactions. The minister is customarily the individual to deal with immediate loss reactions, rather than the general practitioner of medicine, and even more rarely, the psychiatrist. The subject of loss reactions was introduced with the example of the mourning process, which was discussed in terms of objects, object images, and libidinal cathexes. It was possible to show that a person's loss reaction depends to a major extent upon his previous experience with loss. Various types of loss reactions were discussed with particular emphasis on the minister's function on such occasions. One minister offered as an example a woman who had lost her husband suddenly, and who, in a matter of weeks, requested that the clergyman marry her to another man. It became clear to the minister that unless her previous husband's death had been long anticipated, it would be rare for a woman to cope with this loss in so short a time. Such a reaction on the part of the widow might well represent a replacement of the object without significant alteration of the object image. The consequence of being a party to such action was discussed. The clergyman could then see the value of "declaring a moratorium" on such actions.

The minister's role in counseling, not only as he might see it, but also as his parishioners might envisage him, was logically introduced here. The observation was made that, while the minister might not feel very God-like, his parishioners might nevertheless, see him as "God's right hand man." The significance of previous relationships of the person coming for counseling to other father figures was discussed. Two hours were devoted to the problems of transference and the risks of probing.

Community resources available to the ministers on consultation were outlined. Representatives of the local family service organization, youth guidance center, state hospital, and out-patient "psychosomatic clinic," discussed the roles of their organizations in the treatment of the mentally disturbed. We were fortunate in having with us the Court Officer who has many practical contacts with the mentally ill. He outlined his place in the commitment and transportation of patients, and the careful, dignified ways in which these matters are handled.

Those attending the twenty-sixth to thirtieth seminars heard case presentations given by four of the participating ministers; one was presented jointly by the two group leaders. The latter involved a young married woman with an obsessive-compulsive reaction, who was seen by the medical psychologist in supportive and manipulative therapy for a period of several months. During this time, the chaplain was working with the husband and his problems, which proved amenable to pastoral counseling. This case report depicted the closely interacting efforts of the two leaders of the seminars.

Three, two-hour sessions were devoted to the organic problems of the brain and personality. Particular emphasis was placed on the aging process, both from the standpoint of the normally progressive instance and that of senility. The problem of arteriosclerosis was presented in a separate seminar. The role of individual psychological reactions to organic conditions was discussed under the heading: "The Organic Psychoses As

Reaction Patterns." The various ways in which an individual might react to memory failure were examined. It was pointed out that while one oldster might carry a notebook to supplement memory, treating the memory loss as a quiet joke upon himself, seeing the irony of the fact that we are all "prisoners of our own cells," another might display a sense of hopelessness and catastrophic rage. These reaction patterns were related to the previously established ways of dealing with personal losses. Another seminar dealt with such organic afflictions as tumor, birth damage, and acute anterior poliomyelitis.

Two hours were devoted to the referral problems of the ministers. Some had previously experienced strained and unfortunate relationships in seeking help for their parishioners. The ways of referring people to private practitioners, hospitals, and clinics were discussed. This session attempted to prepare the ministers to utilize our community resources better. The mechanism of "transference cures," the value and limitation of such relationships, were discussed. The "typical" transference of the parishioner to the clergyman—that of son to father—was outlined. While this transference is usually of a positive nature, the possibilities of a negative transference of similar content were explored.

A general introduction to psychological testing, the techniques and values as well as some of the pitfalls, was discussed by a member of the Department of Psychology. Intelligence tests, the Thematic Apperception Test, and the Rorschach were introduced as examples. The previously considered mechanism of projection was reintroduced here. The following seminar dealt with supportive counseling and case presentations were given. The value of knowing something about underlying personality problems, versus probing into them, had a place here. The chaplain-leader gave a special session on the role of Christian belief in counseling. The seminars concluded with some discussion of premarital and marital counseling. Here the risk of a triangular situation developing when interviewing man and wife together was outlined.

Early in the second year, with a more formal recognition and construction of the seminars, repeated requests were made to study the problems of accreditation of the courses. This request was made by the ministers who were periodically taking post-graduate courses with the object of obtaining more advanced degrees. It gradually became apparent that an official letterhead was necessary if the spirit of this joint endeavor was to be carried out in correspondence. For this purpose, five dollars per participant was solicited to provide stationery which would adequately indicate the two auspices and the administrative leaders thereof, as well as the two leaders of the seminars and their respective titles. This was the only fee required during the period of the seminars.

In the immediate Boston area there are five well known Protestant seminaries: Episcopal Theological Seminary (Sectarian), Cambridge; Andover Newton Theological School (Baptist and Congregational), Newton; Crane Theological School of Tufts University, Medford; Boston University School of Theology (Methodist); and the Divinity School of Harvard University (of Unitarian origin). Leaders in the schools, either the respective deans or the chairmen of the departments of Pastoral Psychology, were contacted personally in interviews at which both the chaplain and the psychiatrist were present. The mutual acceptance of each others' standards became immediately and pleasantly apparent at the seminaries. The general consensus was that the leaders of the seminars need be appointed to the faculty of only one of the local seminaries, since a provision is in effect allowing students of any one of these seminaries to take specific courses at any one of the others and receive full credit at their own institution. The cordiality and spirit of cooperation which was felt by the psychiatrist, unversed and unfamiliar as he was with the problems involved in dealing with Protestant seminary professors, was a source of pleasure, and gave the leaders of the seminars ample evidence of the interest which was developing in the seminaries in regard to mental health and pastoral psychotherapy. At this writing both of the authors are to be considered for faculty membership at one of the five involved schools. By matriculating at this institu-

tion, at least four hours credit would be allowed for the seminars in Worcester. The students may transfer this credit to their own institution. The theological school at Andover Newton has furthered this connection by sending candidates for the S.T.M. degree to the Worcester State Hospital during the academic year for one day per week. Half of this time will be spent on the wards, and half in seminars. An arrangement has been proposed through which the senior author would teach a course in interview techniques on the campus of one of the five involved schools the following year.

One of the apprehensions of the psychiatrist was that he might be regarded as a convert to religion from science, and that part of the welcome and cooperation might be determined by this factor. It later appeared that the tensions which have frequently obtained when the minister or the seminary professor attempted to speak freely with a member of the psychological profession, were dissipated by the willingness of the scientist to discuss freely the general area with the ministers, while continuing to maintain an element of scientific detachment.

### Plans

Plans are being laid for another seminar, structured similarly to the second year, again beginning in October and lasting until June. It has been obvious that the ministers cannot be expected to sit repeatedly through the same sessions. With this in mind, a smaller group of former participants doing pastoral counseling in their respective parishes, has been contemplated. This group of six to ten practicing parish ministers meet one evening per week. This seminar would not be primarily concerned with the theoretical background, but rather would offer group supervision of counseling efforts, taking up only such theoretical material as may be immediately related to the problem at hand. The ministers have indicated their interest in such a group.

### Pastoral Counseling: Attempts at Definition

We have tried individually to define our respective ideas of pastoral counseling. The senior author has come to regard it as a type of intuitive, reality-oriented, supportive therapy in the untrained. It has been the hope of this physician—which has been justified by experience—to add scientific insight largely of a psychoanalytic, theoretical framework, to this intuitive understanding of the counseling minister.

From the point of view of the chaplain, pastoral counseling involves the individual's relationship to God, himself, and his fellow human beings. In every counseling situation where a clergyman is a participant, it is implied that the "two must face a third."[7] The individual seeks help from the clergyman because, in his eyes, the clergyman is a representative of God. The clergyman may be viewed as a judge or a loving father, someone who will punish or someone who will understand. Previous experience may well determine which attitude will be taken.

Thus pastoral counseling may be viewed as a relationship between pastor and people, in which is revealed the love, forgiveness, and acceptance of God. This becomes more than supportive therapy. It is that factor which, coupled with insight, is able to change the lives of people, to help them discover values beyond themselves as well as within themselves.

### Results

1. It was mutually hoped that the ministers of the area would become more interested and better informed as to the problems of mental illness. With the area clergymen spending two hours a week within the State Hospital, their interest and involvement was immediately apparent. At their request, visits were arranged in all parts of the hospital. Ample opportunity for discussing their observations with one of the seminar leaders was provided. These visits stimulated a general increase in the visitations of the clergy to patients who were connected with their churches. Frequently, before such a visit, the minister would discuss the problem of such interviews with one or both of the directors of the project. Informal continued supervision of such visitations was offered and accepted. Thus the efforts at pastoral counseling were dovetailed with the psychotherapeutic efforts of the hospital staff assigned to the particular patient.

Inherent in the entire program has been a

free and open discussion of any problems that might arise. Perhaps one of the saving features of this system has been the constant recognition on the part of the psychiatrist, and of the other hospital staff members, that the ministers represent a group comprised of conscientious and ethical individuals, seeking frequent consultations rather than to risk error. This has been enough to insure their cooperation and to alleviate any fear of unguided, unilateral action with the patients. This informal consultation continues when the patient leaves the hospital, the minister contacting the responsible staff member, as well as the leaders of the group.

2. The Protestant ministers have frequently referred to the psychiatrist, for consultation and evaluation, parishioners who may need psychotherapy, hospitalization, or other procedures. The type of referral has constantly improved. The ministers have been active in preparing parishioners for outpatient psychotherapy, when they felt it was indicated. Information of the character of a brief, but concise, diagnostic summary has been made available to the psychiatrist by the ministers of particular patients. The value of this is enhanced by their ability to speak the scientific language of the psychiatrist. The patients referred for psychotherapy have been especially acceptable, since they are mostly "fresh" problems without previous psychiatric intervention. The ministers' progressive understanding of the values and limitations of psychotherapy has been obvious in that the referred patients have been almost wholly excellent psychotherapeutic prospects.

3. Another important effect can be seen by observing the outdoor bulletin boards in front of the many churches represented. It is not infrequently observed that the sermon subject is mental health. In this way, some contact with the problems of mental health and illness, and the role of the Worcester State Hospital, has been carried to thousands within the area involved. While it is extremely difficult to measure fully this impact on the community, it has been the feeling that the message carried by the ministers has been a factor in the improvement of the community relationship with our hospital. More important than our local gain, has been the better attitude generated toward the general problem of mental disorders within the central Massachusetts area.

4. Largely under the influence of the leaders and members of the seminars, interest has arisen in the investigation, planning, and formation of a pastoral counseling center for the Worcester area. A committee was formed, consisting of two prominent Protestant ministers, the superintendent of the Worcester State Hospital, the executive secretary of the local council of churches, the director of the Worcester family service organization, and the two leaders of the seminars. Following a discussion, a counseling center was formally instituted by the Greater Worcester Area Council of Churches. It has begun in a modest way, with office space available at the headquarters of the Council of Churches; the Protestant chaplain of this hospital and director of the seminars is already working there. Psychiatric consultants are planned, as well as secretarial service and Protestant consultants from the various denominations who have been trained in the seminars.

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Credit is also due to the participating ministers of the project who added so much to its development.

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# Treatment Technique and Apnea in Electroshock

T. J. MARSHALL, M.D., and D. DOBBS, M.D.

Liberson[1] in 1953 reviewed the physiologic and psychologic changes occurring in the course of electroshock therapy, particularly contrasting the effects of the conventional Cerletti-Bini technique[2] with the Liberson Brief Stimulus Therapy technique (BST).[3] Liberson noted a number of advantages in the BST method; however, he stated that "post-convulsive apnea in some patients may be just as pronounced as with the classical technique." In the interval since 1953, the use of ultra-short acting barbiturates and muscle relaxants has become an accepted part of the treatment; the use of these agents has introduced additional factors which influence the treatment. Under these conditions, it was the impression of one of us (T.J.M.) that the duration of post-convulsive apnea following BST was, in general, less than that occurring with conventional treatments; this study was undertaken in order to corroborate this impression.

Observations were made on 100 unselected treatments by the conventional Cerletti-Bini technique and 100 BST treatments. In this study the conventional technique was characterized by short treatment duration (0.4 to 1.0 sec.), high amplitude unmodified alternating current (60 cycles per second), and bi-fronto-temporal electrodes. BST was characterized by a square wave form with a pulse duration of 0.3 to 0.7 milliseconds, frequency of 120 pulses per second, total treatment duration of 5 seconds, and bi-fronto-temporal electrodes. Patients were all adult males hospitalized at either the Veterans Administration Hospital, Durham, N.C., or Duke University Hospital. Intravenous thiopental sodium or thiamylal sodium was given followed by succinylcholine chloride. There was no observable difference in the level of anesthesia in the two groups. Following the administration of these agents artificial respiration was carried out using 100% oxygen. The electrodes were then applied and the treatment was administered. The duration of the resulting seizure and the apnea were timed. The starting point for each was arbitrarily taken as the instant the actual treatment was begun, regardless of the treatment duration. The end point of the seizure was taken as the last observable clonic movement. The end point for the duration of apnea was that moment when the patient first made inspiratory movements.

Data obtained are summarized in Table I. The mean duration of seizure for the conventional treatments was 36.1 seconds as compared to 41.4 seconds for the BST group. ($P = <.01$.) However, when the duration of apnea is studied, it is found that in the BST treatments the mean is 65.6 seconds as compared to the greater duration with the conventional treatments of 97.0 seconds ($P = <.001$). This result differs from the period of apnea averaging 1.9 minutes as measured by Wilson and Nowill[4] who used the Cerletti-Bini technique. The longer duration in their group would be magnified by the addition of the duration of the seizure, since their period of apnea was measured from the end of the seizure. In the present study the shorter duration probably represents improved anesthetic techniques. The mean dose of succinylcholine administered in each group was 25 mg. The amount of thiopental sodium or thiamylal sodium differed somewhat in that the mean for the conventional group was 288 mg. and the mean for the BST group was found to be 238 mg. In spite of this difference in dosages in the two groups there was no difference in the level of anesthesia. In the BST-treated patients the duration of seizure is approximately five seconds longer than in the patients receiving conventional treatments. It is probable that this difference is the result of the longer treatment duration of five seconds in the BST group and one second or less in the conventional group. In addition, it was our impression that even with the use of the barbiturate and muscle relaxant, the seizure manifestations were less pronounced in the BST group. Of greater importance is the significant difference in the duration of the

From the Department of Psychiatry, Duke University School of Medicine and the Veterans Administration Hospital, Durham, North Carolina.

apnea in the two groups, actually amounting to approximately one-fourth less apnea with BST than with the conventional technique.

The duration of apnea following electroshock therapy apparently is a function of the seizure and would appear to be related to the type of current used. Roth[5] proposed a theory of the action of electroshock therapy, in which he stated that the effects are due to its action on the diencephalon. The difference in the duration of apnea would suggest a less severe post-ictal depression of respiration using BST. This difference is possibly related to diencephalic influences on the respiratory center.

When muscle relaxants are used in the absence of trained anesthesia personnel the parameters of the electric current used should be considered in order to increase the safety of electroshock treatments.

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TABLE I

| | *BST* | *Conventional* | |
|---|---|---|---|
| Mean duration of seizure | 41.1 sec. | 36.1 sec. | P = <.01 |
| Mean duration of apnea | 65.6 sec. | 87.0 sec. | P = <.001 |
| Mean dose succinylcholine | 25 mg. | 25 mg. | P = not significant |
| Mean dose thiopental sodium or thiamylal sodium | 238 mg. | 281 mg. | ——— |

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# Symptom Relief, Authority Substitution, and Suggestibility, with Special Reference to Hypnotherapy

JEROME M. SCHNECK, M.D.

The purpose of this paper is to review personal experience and thinking pertaining to symptom relief in psychotherapeutic practice. The clinical findings have no doubt been part of the experience of other psychotherapists and some views expressed may coincide with those of other clinicians.

Symptom relief or removal has a long history. Its effectiveness in psychotherapy varies now and has varied through the years in the experience of therapists working under differing theoretical orientations. Some claim excellent results and others decry such efforts as completely ineffective. Both assertions are probably exaggerations.

The therapeutic effort may be divided roughly into two categories. One aims solely at removal of symptoms with no attention to underlying dynamics nor effort to influence other aspects of personality functioning and stress elements. The second incorporates an attempt to take general personality features into consideration and to modify to some degree other aspects of personality functioning. The most obvious and highly simplified example of the first approach may be epitomized in a hypnotherapeutic setting by authoritative command for symptoms to disappear without reference to any other issues of psychodynamics. This constitutes a widely held caricature of hypnotherapy. The second entails some type of modification in tone, wording, and timing of suggestions with respect to structuring of the interpersonal relationship. It also involves an attempt at therapeutic influence on the patient's personality problems in general, known or inferred, and the degree to which this is dealt with no doubt varies considerably with the needs of the patient and clin-

From State University of New York College of Medicine at New York City, 26 West 9th Street, New York 11, N. Y.

ical judgment of the therapist. Another point to be mentioned is the differentiation between symptom removal with and without insight in the sense of effort to assist the patient in achieving a measure of understanding regarding conflicts that apparently have played a role in symptom formation. Evidently the achievement of "insight" is not necessarily consistent with ability to experience temporary or lasting relief, although with understandings there may be a greater tendency to obtain effective results. Patients vary greatly in their needs for such explorations and in the effectiveness of this type of investigation. With such explorations there is automatically an incorporation into treatment of broader aspects of personality issues than is the case in simple, delimited, authoritative suggestion. It has been pointed out previously that direct symptom removal usually foments professional controversy, as if to imply that the procedure is simple but ill-advised.[1] On the contrary, it would appear that symptoms essential for maintenance of psychological equilibrium, no matter how neurotic this equilibrium may be, will not be shed with ease. As a matter of fact it could only be an honest admission that regardless of theoretical orientation, long-term psychotherapeutic and analytic procedure may so frequently assist in personality change of some type, yet fail to remove or significantly relieve symptoms for which the patient had originally sought help. The disparaging view of a more delimited but selective effort at symptom relief, or the cavalier attitude toward the importance or persistence of symptoms, must be seen as involving frequently a face-saving measure. The fact is that contrary to the view of symptom relief as easy but undesirable, such relief or removal is indeed frequently quite difficult to achieve.

With the growth of dynamic psychiatry it would be fair to say that simple authoritative suggestion plays increasingly a more limited role than it had in the past. Probably in most psychotherapeutic settings when hypnotherapy is used, the patient-therapist communication does take into consideration issues of personality functioning beyond restricted concern with descriptive features of troublesome symptoms. Whatever the case may be, the relinquishing of a symptom may be construed as implying the intercession of personality readjustment to some degree, with some type of ensuing behavioral adaptation. This may or may not be clearly evident to patient and therapist if the adaptive measures are subtle or perhaps minor in type. Furthermore, conscious awareness of the nature of any such change is not evidently a necessity for the patient. Symptoms which can be relinquished easily may be accompanied by slight reorganization quite out of proportion to the surface significance of the symptoms themselves. Symptom disappearance could be permanent if it played a minor role in the totality of dynamic functioning of the patient whose ego strength is good and whose adaptive capacities are flexible and effective. The reverse is implied in cases of recurrence or of spontaneous symptom substitution. If compensatory mechanisms do not operate effectively, attempts at symptom removal would be unproductive, and this problem may persist even during the course of long term, intensive psychotherapy, unless or until significant personality growth can be achieved. Persistent pressure tactics to force symptom removal without regard to personality needs and over-all ego strength is obviously questionable regardless of psychotherapeutic technique or orientation.

The nature of the transference relationship is undoubtedly of great importance in technically simple, but not necessarily effective symptom removal efforts. This relationship as stimulus automatically impinging on the personality of the patient may set in motion a series of changes leading toward beneficial end results. If the stimulus is not such as to affect the patient's personality on a long term basis, the apparently beneficial changes may be temporary. On the other hand, if effective adaptive mechanisms can be brought into play, the improvement may persist. The nature of the transference plays a significant role in the well known experience of patients deriving help from one therapist and not from another, although the technical procedures employed are essentially similar. The fact that such beneficial changes can persist at times and be followed by more pervasive personality growth has

been well known for a long time, although unacknowledged by many. Relatively recently, affirmation of this type of change has been acknowledged by Alexander.[2] A point of interest in this connection is the experience of observing, in the case of several symptoms, the therapeutic emphasis on one, with its alleviation, followed by or accompanied by relief in others without specifically defined effort having been made to remove them directly. This has been encountered in hypnotherapy and hypnoanalysis as well as therapy that has not involved used of hypnotic methods.[3,4] The change comes about apparently on the basis of a common dynamic core to the sum total of symptoms in evidence. With resolution of the core conflict, the several symptoms stemming from the common base tend to be alleviated. This may happen in every day life, spontaneously without therapy, as well as during therapy. If adaptation is not achieved, substitute symptoms may appear. The dynamic equivalence and relatedness of certain symptoms as observed in clinical therapeutic settings has been demonstrated more recently by Seitz in experimental procedures.[5] An account of a case illustrating some of these points follows now.

The patient, a 28 year old married woman, was referred for complaints of "stomach pain and gaseousness." Fourteen months prior to consultation she became ill with nausea, vomiting, anorexia and gastrointestinal cramps. Three days after onset of these symptoms she developed an inflamed, sore throat with enlargement of anterior and posterior cervical glands. A physician made a diagnosis of "virus infection." Several days afterwards the possibility of infectious mononucleosis was considered. Laboratory examinations were performed and the patient was told that the latter diagnosis was open to question but the problem seemed obscure. Gradually some symptoms disappeared and the redness in her throat vanished. The soreness remained along with cervical glandular enlargement. She was examined by two physicians when remaining symptoms did not abate and was told she had an "anxiety neurosis." She consulted an otolaryngologist who said her tonsils were infected and that he could understand the diagnostic confusion because the locations of the infected areas were difficult to discern. He was able to obtain pus with simple pressure on the tonsils and showed it to the patient. This finding was confirmed soon afterwards by other physicians. As a result a tonsillectomy was performed and her throat discomfort disappeared. Her gastrointestinal distress continued unchanged however, and she was experiencing pain every day without relief until psychiatric contact was established.

When the patient sought hypnotherapy she revealed that she accepted the sequence of events regarding the somatic aspects of her problem as outlined. As for the continuation of gastrointestinal pain, she believed its original onset apparently related to her infection, but its persistence was a somatic expression of psychological difficulty. She related it specifically to the diagnosis of anxiety neurosis which had upset her at the time. She had seen it as authoritative opinion and revealed that she considered herself a suggestible person, implying that the suggestibility exceeded normal limits. It was her belief that the symptom might be relieved if counteracted by another authoritative influence should the suggestibility element be significantly involved, and that a hypnotherapeutic approach could, if used in this way, be representative of such influence. She did not imply that existing anxiety was linked only to her symptomatic distress, and revealed that there were other pressures with which she had to contend. These included difficulties stemming from the severe emotional illness of a close relative and attendant stress placed on her. The demeanor of the patient during consultation reflected her intelligence. She was calm, overtly nonresistant, and spontaneous. She did not exhibit obvious need to control, made no demands, and seemed to be sincerely interested in a professional opinion about the possible validity of views expressed. She hoped brief psychotherapy could be effective.

The hypnotherapeutic effort involved suggestions to allay general anxiety. This was to be accompanied by diminution and disappearance eventually of troublesome symptoms. At the same time she was encouraged in her ability to think through and deal with problems she might have, so that she would find herself capable of functioning more effectively in coping with stress situations. The patient responded well to the first interview incorporating the hypnotherapeutic technique. This approach was reenforced in a second session one week later. She was seen in check-up interviews the following month and one month after that. The patient has continued to do well, remaining asymptomatic. She was treated two years ago.

Aside from the issues discussed earlier in this paper, the theme of authority substitution warrants further comment. It plays a role in many medical settings as well as general life settings, influences personality functioning, and at times personality growth. Often the need to use authoritative opinion as psychological stimulus remains unrecognized. Also, the need to seek substitution of one authority for another may remain unrecognized too. The search is undoubtedly related to early childhood conditionings and

is in essence an extension of needs rooted in infantile relationships. If the need is pervasive in personality activities and expresses itself repetitiously, then total functioning is highly fixated at an infantile level. On the other hand, it may come to the fore only occasionally to serve as a special stimulus required at certain turning points in the operations of an otherwise more mature ego. It may be assumed that the need for authority substitution plays an important role in many settings largely on an unconscious basis. The case outlined above is of interest in that the patient was not only aware of this need consciously, but was able nevertheless to benefit therapeutically. The question arises as to whether this is indicative of more infantile functioning than might otherwise be true. Probably it has less to do with level of maturity in a general sense, and more with the issue of total complexity in behavioral dynamics regardless of traditional concepts of ego development. Conscious and unconscious elements regarding choice of authority play a role too in the selection of a specific therapist and fantasies about him, as well as in the choice of a particular type of therapy. As far as hypnosis is concerned, it has been pointed out previously that it has a variety of equations for people, and among others these have to do with sexuality, death, and re-birth themes.[3,4] Thus, the search for hypnotherapy or benefit derived from it as a result of simple authoritative suggestion may, for example, relate to readiness for personality reorganization as part of a deep inner need for psychological rebirth.[6]

The case presented above is only one of many that have been encountered which illustrate the point of therapeutic change during very brief contact. Such cases are far outnumbered by therapeutically unsuccessful examples where the request for hypnotherapeutic help within one or two sessions is basically an unrealistic expression of unconscious needs and fantasies seeking immediate gratification. Often, more may be accomplished for the patient in discouraging this type of search in the hope that a reevaluation of therapeutic needs may follow, than by acceding to such requests when the unrealistic wishes of the patient are ascertained in advance.

The final item for discussion is suggestibility. It is often assumed that the greater the degree of suggestibility the easier the hypnotic induction and the more efficacious the functioning within hypnosis. Yet a puzzling feature has been contradictory claims regarding patients with hysterical disorders. Some reports mention greater hypnotizability, and others lesser response of such patients.[7] Personal clinical experience indicates that the more important point for suggestibility and hypnotizability, or suggestibility and various aspects of hypnotic behavior, is not degree of suggestibility alone. Rather, it is the reaction of the patient to conscious and unconscious awareness of his suggestibility, and his need or willingness to accept or reject this aspect of his personality functioning. If the tendency is to reject, he may be unable to achieve a hypnotic state, or he may achieve it while demonstrating anxiety reactions with negativistic behavior. The same reaction tendencies may manifest themselves in behavior during the persistence of the hypnotic state, during termination procedure, and in attitudes expressed about the hypnotic experience following its conclusion. These behavioral manifestations will incorporate, of course, not only the suggestibility attribute, but complex elements in total personality dynamics. It is evident, therefore, that symptom relief, authority substitution, and suggestibility, are closely entwined, individually complex, and intimately related to the involved fabric of personality structure and functioning.

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# Meprobamate as an Aid in Psychotherapy

WARREN J. MUHLFELDER, M.D., GLORIA L. GARCIA, M.D., and HAMBLEN C. EATON, M.D.

In our search for a drug suitable in psychotherapy for the withdrawn psychotic patient we were guided by three considerations: 1) The drug had to be effective, i.e., it had to help the patient re-establish contact with his environment and rapport with the therapeutic situation. 2) It had to be relatively free of toxic side-effects, particularly as far as apathy and drowsiness were concerned. 3) It should not be habit forming. Some of our modern tranquilizers—administered in effective dosages—may cause the patient to become even less spontaneous than he had been during the acute phase of his disturbance. However, a heavily sedated or tranquilized patient will not be suitable for psychotherapy either. He will lack alertness, initiative, spark, and access to whatever motivation he has, will be barred.

Our attention was first directed to the possible benefit of meprobamate in psychotic withdrawn patients by a case we treated during 1955 and part of 1956.

### *Case History*

This patient was 26 years old on admission, an unmarried white female from an unstable family background and who had been considered unstable herself. After graduation from high school she had held various jobs for short periods of time. She was resentful toward department heads and supervisors. In 1955 she was admitted to a private psychiatric hospital because of delusional preoccupations dating back to 1948. Content of thought centered mainly around a man whom she had met at a college dance. She thought he had powers over her, directed her thinking and everything that was happening to her. She believed he had spies watching her and that his planes were flying over her house to spy. At the private psychiatric hospital she was diagnosed schizophrenic reaction, and from there she was transferred to the state hospital. Her ward adjustment was unsatisfactory. Though outwardly quiet, she was preoccupied much of the time, affectively flat and withdrawn. Her physical appearance, though attractive, showed signs of neglect and lack of interest. She was unkempt, disheveled, and untidy.

Treatment with electroshock, Sparine, Thorazine, Serpasil, individual and group psychotherapy was unsuccessful. Patient became more withdrawn and preoccupied. One year after admission to the state hospital meprobamate 400 mg. four times a day was prescribed. The medication was continued until a total of 140,800 mg. over a period of almost three months had been administered. This treatment was combined after approximately two weeks with individual psychotherapy. The results were, in contrast to previous unresponsiveness, rather spectacular. She became alert, cheerful, spontaneous, cared about her personal appearance, socialized better with other patients, ward personnel, and her own family, conveyed in addition to her physical assets a sense of inner attractiveness and within a short time lost her delusional preoccupations. She was presented to parole staff after about three months, at which time such opinions as, "Appeared to respond to meprobamate . . . Has shown little previous improvement but did improve with meprobamate and some psychotherapy . . . Not overtly delusional and hallucinated at this time . . ." were expressed. There were no unfavorable side-effects from the drug. Parole was permitted and patient left the hospital in a state of satisfactory remission.

From Harrisburg State Hospital, Harrisburg, Pa.

On the basis of this experience a more systematic study with meprobamate and a placebo containing essentially the same physical characteristics as the drug was started. The study was of the double-blind type with neither the patient nor the ward personnel being aware who was taking the drug and who the placebo.

Twenty patients were selected for the study. While their clinical diagnoses were at some variance, their symptomatology bore resemblance in essential areas. They all were withdrawn and in poor contact. Their interpersonal relationships had suffered greatly and they showed considerable self-alienation. All patients were individually interviewed in advance of the study and, once selected, were divided into a drug and placebo subgroup. Laboratory studies consisting of complete blood counts, liver function tests, and urinalyses were done one week prior to starting them on the drug. Medication consisted initially of 800 mg. meprobamate four times daily. The control group received two placebo tablets four times a day. All other treatment had been

discontinued one week prior to the start of the study. While the patients were on medication laboratory tests were done every two weeks. Total duration of drug and placebo intake in this group was two months. There was continuous contact with the patients involved, with frequent evaluation as to beneficial or adverse effects. Criteria for success were increased alertness, better contact, emerging transference, partial insight, i.e., realization that they were in need of treatment, but not cessation of preoccupations, hallucinations and delusions, fears, etc. Considerable concern also focused on the question of toxic side-effects involving kidneys, liver, and blood-forming apparatus. Two weeks after the drug had been discontinued final laboratory tests and psychiatric interviews were conducted.

All patients in this study were women ranging in age from 25 to 63. (Table I.) They had been hospitalized from one to 22 years and were all patients at the time of this investigation. Most participants were schizophrenics of the various sub-types. In the meprobamate group one patient carried the diagnosis psychosis with mental deficiency, but manifested many schizoid trends in her personality make-up and was clinically indistinguishable from our simple schizophrenics. In the placebo group all patients were classified as schizophrenics. All patients on meprobamate and placebo lacked insight and were in poor contact with their environment. Hallucinations and delusions were admitted or present in various degrees. None of the 20 patients had any well-defined incentive for definitive treatment. There were vague unstructured wishes to be released from the hospital based on residual desires to rejoin their families or negativistic tendencies to oppose what was felt to be the doctor's plan for them. None of these patients seemed to have any concept of teamwork, or to conceive of any obligation toward herself, or to contribute toward getting well. They were therefore at best "sitting" and waiting for some magical solution—other than shock, insulin, or "dope."

TABLE I

*Analysis of Clinical Data*
(20 Patients)

| | Placebo Group | Placebo Group |
|---|---|---|
| Age | 31–63 yrs. | 25–51 yrs. |
| Hospitalization | 2–22 yrs. | 1–16 yrs. |
| | No. or Patients | No. of Patients |
| Improved | 8 | 2 |
| Improvement maintained | 5 | 0 |
| Unimproved | 2 | 8 |
| Withdrawal reaction | 2 | 0 |

Meprobamate as well as placebo had the advantage of not running counter to the conscious or unconscious expectations our patients had from the "new medicine." They were only told that they would be given a different tablet and as there was no marked effect one way or another from the initial medication no objections came to the attention of the investigators.

In the meprobamate group eight out of 10 patients improved. Greater spontaneity and alertness was noted two to three weeks after the start of medication. It reached its peak in approximately six weeks. Of the two unimproved patients one was 51 years old, 16 years in the hospital; her diagnosis was schizophrenia, paranoid type. At no time during this study did she show any evidence of re-integration. The second unimproved patient was 38 years old, had been in the hospital 15 years; the diagnosis was psychosis with mental deficiency. She showed a brief favorable response in the beginning which, however, she was unable to maintain. The other patients of this group were, with one exception, in the hospital from two to five years.

Of the improved patients three did not maintain improvement after meprobamate was discontinued. One patient reverted gradually to her original state of withdrawal and delusional preoccupations. The other two, both in the hospital for four years, had what might be considered acute withdrawal reactions within the first week after the drug was discontinued. One showed an exacerbation of her paranoid delusions, bizarre behavior, a negativistic attitude toward fellow patients and ward personnel; the other became perplexed, bewildered, and tearful, with disorganization in her thinking a conspicuous symptom. Both required transfer to the acute service and institution of a treatment plan with one of the accepted somatic procedures. They promptly responded and within a short time reverted to their

"status quo." Improved patients became more pleasant and friendly in their interactions with ward personnel and other patients. They were in better contact with reality and found it easier to communicate. There was a subjective feeling of greater well-being. Verbal productions became more coherent, relevant, and plentiful. Excessive somatic preoccupations had subsided; blocking was no longer a prominent feature. They were able to smile readily, showed increased spontaneity and a livelier facial expression. Some patients who had been inactive began to engage in useful pursuits. One of the patients who slowed a withdrawal reaction participated in the editing of the hospital paper while the improvement lasted. Insight on a deeper level was not achieved through the drug alone, nor did preoccupations, delusions, etc., disappear entirely—they only became less space occupying, giving the patients a chance to form a greater incentive for becoming well, to develop transference to their therapist, and to cooperate actively with the therapeutic situation.

Laboratory tests were confined to white blood counts, sedimentation rate, hematocrit, Hb., blood sugar, BUN van den Bergh, total bilirubin, cephalin flocculation test, and urinalysis. White blood counts ranged between a high of 10,950, the first count in one patient, and a low of 3200, the last count in another whose initial count had been 5050 and whose count showed an immediate reduction, i.e., within two weeks to 3500. Thereafter, insignificant fluctuations in the 3000 bracket were recorded. Differential counts were clinically not significant. A relative lymphocytosis was noted in the case who showed a leukopenia. There was no left deviation. Sedimentation rates fluctuated between 42 and seven. It should be mentioned, however, that sedimentation readings in the 40 bracket are not infrequent in this hospital. Within the same cases changes in the sedimentation rate were insignificant. All hematocrit values were in the 40 bracket. Hemoglobin levels were all within the normal, ranging between 14 and 11.5, not changing much one way or another. Blood sugar and BUN values determined on two patients were normal. Cephalin flocculation gave no indication of liver damage. In six patients readings went up to 3+ after 48 hours at one time or another. No renopathology was suggested by the findings in the urinalyses.

In the placebo group eight out of 10 patients remained unimproved. There were mild transient changes for the better initially among a few patients. These were attributed to the psychological boost from "a new medicine" or, in one or the other instance, from "therapy per se." One unimproved patient, age 50, five years in this hospital, with the diagnosis of schizophrenia, paranoid type, appeared more cheerful and lively, but continued to lack in coherence, relevance, and affective appropriateness. At no time did she really demonstrate better accessibility. Contact with reality remained low and there was no way of reaching her for psychotherapy or otherwise. An improved placebo patient who was 32 years old, four years in the hospital, with the diagnosis of schizophrenia, paranoid type, had some feeling of subjective well-being and was somatically less preoccupied, "minded" her headaches less, was less troubled by auditory hallucinations, was more accessible, and therefore more suitable for psychotherapy. However, improvement was not maintained after the placebo was discontinued. The second patient in this group was 48 years old, had been in the hospital nine years, and carried a diagnosis of schizophrenia with mental deficiency. She insisted that the "medicine" made her feel better. There was slightly increased spontaneity, less blocking. Better rapport for psychotherapy could be established. Two weeks after the placebo had been withdrawn the slight improvement was

TABLE II

*Analysis of Laboratory Findings*
(20 Patients)

| | Drug Group | Placebo Group |
|---|---|---|
| Hemoglobin | Normal | Slight reduction—1 |
| Erythrocytes | Normal | Slight reduction—1 |
| Leukocytes | Moderate reduction—1 | Normal |
| Differential count | Lymphocytosis—1 | Normal |
| Urinary findings | Normal | Normal |
| Cephalin Flocculation above 3+ | None | None |

still observable. One of the placebo patients who showed no favorable change was placed on meprobamate after conclusion of the study. She improved promptly and is still in much better contact, more appropriate and caring for her needs. Improvements in the placebo group were considered only slight with a minimal degree of transference.

The same laboratory tests were performed on the placebo group as on the meprobamate group. White counts ranged between a high of 14,050 and a low of 4450. Differential counts, sedimentation rates, hematocrits were not remarkable; one patient had both a reduction in hemoglobin and her red count. Other hemoglobin values were within normal limits. There was one slight elevation of blood sugar throughout the study. Cephalin flocculation tests were, as may be expected, normal. However, there were a few instances of a 3+ at the 48-hour reading. No abnormalities were noted in any of the urinalyses. Toxic reaction not demonstrated in laboratory tests was not observed at any time either during or upon completion of the study.

Because of the favorable results, meprobamate therapy was started on ten more patients at various times. As in our study, about 20% showed no response or an unsatisfactory one. The remainder achieved some significant reduction of anxiety level, became less withdrawn, less preoccupied, more accessible and capable of some transference reaction. About 5% of all patients on meprobamate, 800 mg. four times a day, complained during the first few treatment days of drowsiness. This was counteracted by Dexedrine, 5 mg. at 11:00 A.M., which did not influence the patients' sleep rhythm adversely and did not reduce the effect of meprobamate. For a brief period three patients required 1200 mg. meprobamate four times a day. The larger dose was well tolerated.

## Conclusions

Prolonged observation suggests:

1) That meprobamate in doses of 800 to 1200 mg. four times a day reduces the anxiety level of the chronic psychotic patient effectively, especially in patients hospitalized less than five years.

2) That greater spontaneity, better contact, and less preoccupation renders the patient treated with large doses suitable for psychotherapy.

3) That toxic effects and side reactions are minimal.

4) That further investigations are indicated to more definitely establish meprobamate as the drug of choice in psychotherapy for chronic, psychotic patients.

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*Authors' Note:* The drug, meprobamate, used in this study, was supplied by Wyeth Laboratories, under their tradename Equanil.

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# Effect of Nialamide Alone and in Combination in Treatment of Depression

SAM PARKER, M.D.

Since the discovery that iproniazid elevates the mood of depressed patients, other monoamine oxidase inhibitors have been studied to determine whether they might have similar psychopharmacologic benefits without the hepatoxicity associated with iproniazid. One of the drugs which has proved safe and effective is N-[2-(benzylcarbamyl)ethylamino]-isonicotinamide, designated generically as nialamide (Niamid-Pfizer).

Clinical and pharmacological studies indicate that nialamide provides impressive relief of psychotic and psychoneurotic depression and of such subjective symptoms as anorexia, insomnia, psychomotor retardation, and fatigue.[1] The following report is of a clinical study to determine the effect of nialamide when administered alone or with other therapies in the treatment of depression.

## Materials and Methods

Twenty-seven patients, 14 men and 13 women, with acute endogenous depression were selected at random from private psychiatric practice for treatment with nialamide. Patients were between 13 and 74 years old, their average age was 46 years. Twenty-three of the patients had one or more previous episodes of acute depression, and four patients had no history of previous mental illness.

Eighteen of the 27 patients had failed to respond or responded poorly to other psychopharmacologic agents; nine patients had not received previous therapy for their current depression. Pertinent symptoms and concurrent illnesses are listed in Table I, unsuccessful therapies are listed in Table II.

All patients received 50-75 mg. of nialamide daily in two or three divided doses. Sixteen patients received one or more concomitant therapies (Table II), including electroshock treatment, central nervous system stimulants, tranquilizers or other psychotherapeutic agents. Eleven patients received no concomitant psychotherapeutic agents. However, when indicated, other drugs, including analgesics and muscle relaxants, were administered for treatment of concurrent illnesses.

## Results and Comments

Twenty-six of the 27 patients improved under nialamide therapy. There was no ap-

TABLE 1

*Pertinent Symptoms and Concurrent Illnesses Among Depressed Patients*

| | No. of Patients |
|---|---|
| Agitated reaction | 5 |
| Hypomanic attack | 2 |
| Hypochondria | 5 |
| Schizophrenia | 3 |
| Paranoia | 4 |
| Anxiety states | 4 |
| Paralyzing inhibition | 1 |
| Neurotic character disturbances | 1 |
| Weight loss—Anorexia | 4 |
| Involutional melancholia | 1 |
| Obsessive and compulsive | 1 |
| Retarded—Brain damage | 1 |
| Encephalitic parkinsonism | 1 |
| Thomsen's disease | 1 |
| Insomnia | 1 |
| Suicidal tendencies | 2 |

Several patients had two or more pertinent symptoms.

TABLE 2

*Other Medications Administered*

| | Unsuccessful Therapies Before Nialamide | Therapies During Nialamide |
|---|---|---|
| Electroshock treatment | 8 | 10 |
| Phenylisopropyl hydrazine | 3 | — |
| Iproniazid | 7 | — |
| Methylphenidate | 2 | 1 |
| Methamphetamine | 2 | — |
| Trifluoperazine | 2 | 5 |
| Perphenazine | 7 | 3 |
| Phenelzine dihydrogen sulfate | 3 | — |
| Imipramine | 1 | — |
| Dimethylaminoethanol | 1 | — |
| Chlorpromazine | 3 | — |
| Benactyzine and meprobamate | 1 | — |

(Several patients received two or more medications)

preciable difference in speed of response between patients who received nialamide alone and those who also received other types of therapy. Although four patients responded in two or three days, for the most part responses were slow. On the average, patients who had failed to respond to previous therapies required 8-14 days before their first improvement under nialamide. Patients who had not previously been treated responded somewhat faster, but nevertheless most required 5-7 days before their first improvement. Two patients required 20 days of therapy before responding.

Improvement was first seen in a reduction in the severity of symptoms. Patients slept better, became more alert and more interested in their personal appearances. Their appetites improved and underweight patients began to gain.

Hypochondriacal complaints decreased. As patients attained greater self-sufficiency and independence their interest in others increased. Improvement was usually gradual and it was often several weeks before patients had optimal responses. Although nialamide is a slow starting drug, it apparently produces a smoother effect than phenylisopropyl hydrazine, phenelzine dihydrogen sulfate, iproniazid or other psychic energizers which in some instances cause exaggerated amphetamine-like effects, e.g. jitteriness, pressure of activity. This is an advantage of nialamide because such side effects may frighten depressed patients and retard their improvement.

Side effects to nialamide therapy were mild and infrequent, occurring in only four of the 27 patients. A mild hypotension was seen in three patients who complained of a slight lightheadedness in the morning. None of these patients displayed marked evidence of hypotension and the side effect did not in any way constitute a difficulty in electroshock treatments. In all three cases, hypotension disappeared in a few days with no change in dosage of nialamide. In addition, one of these patients also complained of "sour stomach," a transitory side effect which disappeared spontaneously with no change in nialamide dosage. Another patient who received electroshock therapy while on 75 mg. of nialamide daily complained of a mild, transitory overstimulation which disappeared when the dosage of nialamide was reduced to 25 mg. b.i.d.

The fourth patient attempted suicide while on nialamide therapy. After improving rapidly on 75 mg. of nialamide daily accompanied by a series of four electroshock treatments, the patient took several nialamide and perphenazine tablets in a suicidal gesture. She was promptly given a gastric lavage, and suffered no ill effects. Nialamide therapy was continued at the same dosage, but trifluoperazine was also administered, 5 mg. b.i.d. The patient continued to improve rapidly and showed no further suicidal tendencies.

Tests of liver function and blood chemistry failed to reveal any adverse effects due to nialamide therapy.

Nialamide did not adversely affect the efficacy of electroshock treatment. On the contrary, several patients required less treatment with electroshock than would ordinarily be expected. Particularly gratifying was the fact that one patient who had a myocardial infarction, and thus was not a candidate for electroshock treatment, had an excellent response on nialamide 25 mg. t.i.d. He had previously failed to respond to therapy with phenylisopropyl hydrazine.

Nialamide appears to increase to a very marked extent the relief afforded by analgesics or muscle relaxants. Of particular interest is the evidence of drug potentiation produced by nialamide in one patient whose depression was associated with Thomsen's disease (myotonia congenita) and in another whose depression was associated with postencephalitic parkinsonism.

### Case Histories

*Patient 1:* A 46-year-old dental mechanic was treated for depression associated with Thomsen's disease. In this patient, the usual intensification of muscle tonus was limited to the thighs and caused a marked scissors-gait similar to that noted in cerebral spastics. He had not responded to any therapy, and his only reaction to methocarbamol, zoxazolamine, carisoprodol and other muscle relaxants was a feeling of drowsiness. Nialamide, 25 mg. b.i.d., was administered along with 700 mg. of carisoprodol daily. He soon noted an improvement in mood, better mobility and loss of drowsiness. Although muscle relaxants had not previously helped him, with the addition of nialamide his scissor-gait was much improved, he no longer needed support in

walking, and no longer toppled when he moved. He is now maintained satisfactorily and feels more relaxed and capable.

*Patient 2:* A 45-year-old accountant was treated for depression associated with encephalitic parkinsonism. He suffered from tremors and stiffness, primarily in the left shoulder, loss of associated movements, stooping posture, and an oily, mask-like facies. In two years of treatment he had received little or no benefit from a variety of antiparkinsonian drugs, including benztropine methanesulfonate, ethopropazine HCl, and captodiamine HCl. He was particularly bothered by side effects of drowsiness, queasiness, and grogginess. Addition of nialamide, 50 mg. daily, to his therapy promptly elevated his mood and improved the action of the other drugs on both tonus and tremors. The side effects of antiparkinsonian therapy were reduced or eliminated. He has been on nialamide and antiparkinson drugs for over three months and looks almost normal, with no more oily or mask-like facies and much improved posture and activity.

The potentiating action of nialamide was also evident in some of the patients who received such phenothiazine tranquilizers as perphenazine or trifluoperazine—providing improved tranquilization without sedation. There was no evidence whatever that nialamide caused any increase in untoward reactions to the phenothiazines or to any other drugs.

The addition of other psychopharmacologic agents to nialamide therapy was particularly effective in a few cases in which nialamide alone appeared to produce only a partial recovery. Some patients who had failed to respond satisfactorily to therapy with tranquilizers and electroshock often showed partial improvement on nialamide therapy. At the time of maximum response to nialamide, addition of one or more of the other agents often produced further improvement.

## Summary and Conclusions

Twenty-six of 27 patients who received nialamide (Niamid-Pfizer) for acute endogenous depression had excellent responses. Nialamide is a slow acting drug which requires, on the average, between 8 and 14 days before therapeutic effects are noticeable. Nialamide appears to enhance the efficacy of supplemental therapies, including phenothiazine tranquilizers, electroshock treatments, analgesics, and muscle relaxants. Depressed patients often responded better to combined therapy with nialamide supplemented by tranquilizers and/or electroshock than to any of these methods of treatment alone.

Side effects were mild. Three patients appeared to have a slight, transitory reduction in systolic blood pressure, and one patient made a suicidal gesture. Laboratory tests gave no evidence of hepatotoxicity or blood dyscrasias.

Nialamide appears to strengthen ego function and to improve accessibility to psychotherapy. It is a safe, slow acting drug with a smooth effect of value in treating depressed patients. The ability to improve the patient's psychic condition and to potentiate the activity of other drugs combine to make nialamide a particularly effective drug for treatment of depression.

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# Report on a New Drug, Captodiamine

## A Preliminary Investigation

CHARLES W. CASTNER, M.D., and ROY C. NOBLE, M.D.

At the Rusk State Hospital during the past two years captodiamine hydrochloride* has been evaluated in two open wards in the management of chronic psychotics and as an adjunct to basic therapy in patients under active treatment.

The compound, p-butylmercaptobenzhydryl-beta-dimethylaminoethylsulphide, was developed in Denmark and has been submitted to intensive clinical study in Europe, South America, Canada, and the United States for the past four years. These evaluations led the manufacturers to conclude that captodiamine hydrochloride is a "non-hypnotic stabilizer" because its overall effect was not primarily to relieve the symptoms of tension but also to ameliorate the underlying emotional instability of tension states. This was suggested by the medication's effectiveness in relieving either agitation or depression resulting from tension, without impairment but rather improvement of abilities to think and function.

The literature specifically reports this action in the following indication: 1) the control of hyperactive children with brain damage,[1] 2) an aid in psychotherapy,[2,3,4] 3) an "anti-repressant" or "loosener" in psychotics (primarily schizoid),[5] 4) stabilization of neurotic tension states manifested in agitation or depression,[2,6,7,8] and 5) in the control of psychosomatic patterns caused by tension.[2,3,9]

In addition, functional gastrointestinal diseases were particularly benefited, probably because the drug also has a direct musculotropic spasmolytic action on smooth muscle.[10]

At Rusk State Hospital we were interested in investigating a drug which might stabilize the manifestations of tension in psychotics, especially in patients receiving domiciliary care. We have obtained good control of psychotic symptoms with both tranquilizers and stimulants, but once this control was established and the patient oriented we also needed individual therapy which would control tension and at the same time aid in adjustment.

We, therefore, decided to evaluate the drug in 60 selected patients falling into two categories—1) Patients showing favorable progress on active therapy (⅓ of the patients). 2) Domiciliary patients presenting problems in ward management, such as constant psychosomatic complaints (2/3 of the patients). We used captodiamine hydrochloride in the former both during rehabilitation therapy and after release from the hospital as an aid in emotional stabilization. In the chronic patient it was given in the hope that it would help him into a more productive institutional life.

Patients receiving rehabilitation therapy were given the drug adjunctively with tranquilizers, stimulants, electric shock therapy or psychotherapy, depending on the stage of progress. In the chronic patient it was either given adjunctively or alone.

The patients studied were primarily schizoid in type. They had been hospitalized on an average of eight years, with a range of under one year to over 25 years. They were from 16 to over 60 in age and were about equally divided as to sex.

Tension, manifested as agitation, depression or psychosomatic disorders, was a common denominator in all patients. In many the symptoms were multiple. Some of the patients presented tension manifestations which had not responded to prior tranquilizers or stimulants.

Tension, particularly, in the chronic patient, appeared as absorption in fears and complaints, which in some were so "chronic" they refused to work or participate in hospital activities. Some simply spent all their time in bed; others spent all their energies in reciting their ailments. In those whose tensions were seen as withdrawal or depres-

*Supplied as Suvren® by Ayerst Laboratories, New York, New York.

sion there was disinterest in themselves and their environment.

Psychosomatic complaints were frequent, especially gastrointestinal ailments. Many had a combination of symptoms—headache, generalized aches and pains, vomiting, nausea, cramps or gas, or fear of food and constipation.

*Dosage:* In all patients initial dosage was usually 100 mg. four times a day for 7 to 14 days. After this period a maintenance dose was determined, which in most patients was 50 mg. two to three times a day. This reduced dosage was generally used when tranquilizers were also in the regimen. It was also possible in some patients to reduce the tranquilizer dosage.

## Results

In an evaluation such as this results must be based primarily on observations of the patient's overt behavior and performance. Such clinical impressions cannot be decisive and cannot point to a specific pharmacological effect of a particular medication. However, in judging the effects of captodiamine hydrochloride we could in some measure rely on our impressions when it was given alone or given after other drugs had failed to draw out a response and when patients exhibited clear cut and consistent improvements in behavior and performance.

Furthermore, the drug was given to patients with chronic complaints. This is sometimes a practical criterion of the efficacy of a medication. We, therefore, felt warranted in concluding the following about the usefulness, limitations and safety of captodiamine hydrochloride. The accompanying case reports illustrate the effect obtained on the patient's mental outlook and behavior. They do not represent cures.

1) Captodiamine hydrochloride therapy appeared to release the basic tension whether it was in the form of agitation or withdrawal.

### *Case Histories*

*M.B.;* catatonic schizophrenia; rehabilitation therapy. The patient was uncontrolled, noisy and uncooperative with incessant complaints of stomach pains and headaches. Prior therapy with both chlorpromazine and reserpine brought no improvement in behavior or complaints. After captodiamine hydrochloride therapy, however, she was able to start rehabilitation therapy. She became quieter, interested in her problems and showed a concern for her personal appearance. After therapy with the drug, and for the first time in her year of hospitalization, she started working at a regular ward job and participating in recreation.

*C.H.;* paranoid schizophrenia; hospitalized for two years. He received captodiamine hydrochloride as the only drug in overall therapy. This patient had lived in constant depression, governed by fear, particularly fear of food and constipation, and as a result refused to eat. After therapy there was clear cut lifting of fear. Food no longer brought on complaints, and his attitude shifted from depression to alertness and cheerfulness.

2) Captodiamine hydrochloride therapy was effective in psychosomatic complaints. In addition to psychogenic benefits there seemed to be an independent spasmolytic action which aided in the relief of functional gastrointestinal disorders. A marked benefit was observed in gastrointestinal complaints.

### *Case History*

*C.H.;* paranoid schizophrenia; rehabilitation therapy. Patient received only captodiamine hydrochloride as adjunctive drug therapy. Before administration of the drug he had spent his two years of hospitalization complaining constantly of abdominal cramps and headache, and had resisted work and other activities. After therapy he lost all GI symptoms and his headaches became infrequent. He volunteered to work and became generally cooperative and interested in rehabilitation.

3) Therapy was not associated with drowsiness, lassitude, loss of initiative or depression. In general, patients were better able to function and cope with actual problems. Interest and cooperation were the rule, not mere acceptance and sedation.

### *Case History*

*F.W.;* manic depressive; chronic domiciliary patient hospitalized for 15 years. Before receiving the drug she consistently refused all social contact, wearing no clothes, seeing no company and receiving no mail. She was tense and nervous. After therapy there was a decided change in her long-standing patterns. She began to be interested in her personal appearance and her environment, accepting the clothes, company and mail she had formerly rejected.

4) Captodiamine hydrochloride was effective for maintenance therapy after discharge from the hospital. It aided in emotional sta-

bility and adjustment to a new environment. It was preferable to other maintenance therapy because it did not merely control symptoms and did not produce euphoria, and therefore could not be used by the patient to make him feel better.

5) There was no tendency to habituation or dependency even in patients receiving the drug steadily for two years. This was apparent when it was discontinued in some patients and no withdrawal symptoms were observed.

6) There was no evidence of toxicity or side effects. Pulse, blood pressure, and respiration were not altered. Urinalyses showed no changes attributable to the drug. Red, white and differential counts showed no variations. In general, there was a slight rise in hemoglobin rate after the patient was on the therapy for several months.

## Discussion

We do not believe that captodiamine hydrochloride can be classified with the tranquilizers, and although it has given beneficial results in depression it is certainly not a stimulant. Its effect is perhaps most accurately described as stabilizing in that it relieves emotional instability whether it is manifested as agitation or depression. Like the tranquilizers, however, the best results are seen with agitation.

The action of the drug is moderate sedation and it is not indicated in the control of acute symptoms of psychosis. Nor can it be used to give immediate relief of acute symptomatology in any indication.

At Rusk State Hospital we have adopted captodiamine hydrochloride as part of our therapeutic routine for all states showing instability or psychosomatic symptoms. We cannot point to its role in overall improvement of our patients, but we can note that in about 75% of all patients who have received the drug there was definite improvement. We feel that captodiamine hydrochloride served to speed up, facilitate and augment their rehabilitation or adjustment. These 75% have either been discharged or are working at jobs in and out of the hospital.

We present this report, not as a final judgment on the efficacy and limitations of captodiamine hydrochloride therapy but because we feel its potential is sufficient to merit further study.

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# Marsilid and Epinephrine Metabolism

ABRAM HOFFER, M.D.

After nearly half a century of sporadic courtship, psychiatry and biochemistry have reached the conjugal bed. It is not clear at the moment whether the honeymoon is romantically full of bliss. Some of my colleagues among both groups remain skeptical that the union will endure. Nevertheless, it has already born sturdy fruit.

The most enthusiastic believer in external causation will concede that there may be some biochemical component to schizophrenia, to senility and even perhaps to the psychotic depressions, but certainly not to anxiety or tension. The most enthusiastic believer in internal causation has excluded from his field of study the vast group of neuroses where it is believed anxiety or tension is basic. It is therefore exciting indeed to think that both groups of enthusiasts may be proven wrong in the near future. Marsilid has driven a chemical wedge into the hitherto impenetrable armor of the analytic system.

Yet this state of affairs is most unusual. Several decades ago it seemed obvious that the first area of psychiatry to yield to biochemical treatment would be the anxiety states. For, at that time it was known (1) that the epinephrine produced anxiety in humans, (2) that compounds similar in structure to epinephrine, e.g. benzedrine, often induced euphoria, (3) that most social euphorients and antitension compounds such as alcohol, Kava Kava, betel nut, etc., were chemicals, (4) that inhibitors of amine oxidase were euphorients, delerients and energizers, and (5) that an essential component of hallucinogenic experience was euphoria.

Instead, we find psychological theories of anxiety carrying the field. I must pay tribute to the remarkable skill and enthusiasm of modern psychiatric writers who had finally convinced us of the essential psychologism of tension.

From Department of Public Health, University Hospital, Saskatoon, Canada.

This paper was presented at a Marsilid Symposium, September 26, 1958, in San Francisco.

Marsilid which has so many interesting properties has renewed interest in chemical euphoria. If this were its only activity, it will have served a most useful function. In fact, it has done more as will be clear from the literature. I propose in this paper to accept the fact that Marsilid, if properly used, has clinical utility and I will discuss theoretical ideas which lead me to the conclusion that Marsilid functions as an antitension drug by interfering with epinephrine rather than with serotonin metabolism.

The terms anxiety and tension and depression are often used interchangeably. For the purpose of this paper, I would like to offer the following definitions. Tension is that feeling of discomfort familiar to us all which expresses itself by increased muscle tone and eventually leads to pain. Continued for a long time, it leads to extreme anguish and a host of other clinical changes.

Anxiety is very similar to tension and one is seldom free of the other. It is, however, more often associated with environmental and psychological factors. It tends to be limited in time. When prolonged into what is known as a chronic anxiety state, it has merged into tension. Patients often ascribe their anxiety to some idea, event or thing but may complain of being tense without any definite relationship to external or internal events.

Depression is a feeling of sadness or unhappiness which is associated with or follow other ideas, events or things. I do not believe pure and simple depression is possible. It is the final psychological response to external events or to an internal state of disease including prolonged tension or anxiety. It is common in all chronic illnesses.

Euphoria is a state of mind at the opposite continuum to depression. It is a psychological state of happiness often not warranted by a real appreciation of the facts, e.g. in the lover. In excess, euphoria is often associated with feelings of unreality and even psychosis. Depression and euphoria cannot be present at the same time in a person although one may fluctuate rap-

idly between these two states of mind. However, tension and anxiety may be present with either depression or euphoria. Thus we have agitated depressions where severe tension and sadness co-exist and the manic patient where there is marked tension and euphoria. The depression-euphoria continuum is quite separate from the tension-anxiety syndrome.

These distinctions are most important for an adequate study of antitension or antidepression drugs for it is necessary to treat not only the depression-euphoria syndrome but also the tension which may underlie it. If chronic tension has led to depression, it is essential to ease the tension as well as to euphorize the depresion. It is because these distinctions have not been made that certain false assumptions have been made in pharmacology. An animal which runs around a cage twice as fast as its placebo control is not necessarily twice as happy. The assumed correlation between activity and euphoria is not proven. Many subjects experience profound euphoria during an LSD-25 experience but are quite inactive.

There are therefore strong clinical demands for three classes of drugs: (1) those that alleviate tension and anxiety, (2) those that alleviate depression by moving the patient part way toward euphoria, and (3) those that depress over euphoric patients. Many social euphorients are known and used. Very few medical euphorients are available. Marsilid in my opinion is more an antitension drug rather than an euphorient. Tension is alleviated in the absence of sedation or tranquilization.

*Hypothesis*

Marsilid inhibits amine oxidase which in turn metabolizes epinephrine and serotonin. It has been suggested that both the euphoria or decrease in tension induced by Marsilid and the depression induced by reserpine are mediated chiefly through serotonin metabolism. It is my hypothesis that the action of Marsilid is primarily through its interference with epinephrine metabolism.

In Table I are shown some of the suggested metabolic routes of epinephrine. These include the amine oxidase route leading to unknown aldehydes which apparently still have some sympathomimetic activity, a sulfo esterase route when given by mouth leading to ethereal sulfates, a route via enzymes which add methoxy groups to epinephrine, an oxidase route leading to adrenochrome and its derivatives and polymers and perhaps still unknown routes.

TABLE I

*Marsilid*

| Epinephrine: | |
|---|---|
| amine oxidase | aldehyde |
| esterase | sulfate |
| methoxylation | methoxy epinephrine |
| oxidase | adrenochrome |

Epinephrine is very toxic and it must therefore be destroyed as quickly as it is formed. Any block in some of the enzymes which metabolize epinephrine must increase the load on other enzymes. I suggest for consideration the hypothesis that Marsilid is an antitension drug because it blocks amine oxidase and increases the formation of adrenochrome and that adrenochrome which is also an antitension drug counters the tension induced by the epinephrine.

*Evidence*

If this is so we will expect the following statements to be true:

(1) Epinephrine produces tension and is involved in the experiencing of tension and depression-euphoria. Analogues of epinephrine may be antitension compounds.

(2) Substances which interfere in the metabolism of epinephrine will produce marked changes in tension and in depression euphoria.

(3) Adrenochrome is an antitensive.

Briefiy, tension is then proportional to the ratio of epinephrine over adrenochrome. High ratios due either to too much epinephrine or too little adrenochrome cause tension. Low ratios are associated with absence of tension.

*Relation of Epinephrine to Tension*

Landis and Hunt[1] on the basis of a literature review and their own experience reported that injected epinephrine produced genuine anxiety. At that time, there was some controversy as to whether the emotion felt was real, i.e. identical with the feeling in that person not injected with epineph-

rine, and anxious. This argument has been settled by default. Most of us accept any emotion as real and do not expect perfect identity. The epinephrine anxiety is a model of the real tension experience in the same way that the LSD-25 experience models some aspects of schizophrenia.

The tension induced by epinephrine injection is not related to the transient increase in blood pressure. It may occur up to one hour after the injection during a period when blood pressure is normal. In contrast to the known tension-producing property of epinephrine is the absence of reports showing the serotonin induces anxiety or tension. When given to psychiatric patients epinephrine in general aggravates anxiety states and depressions, potentiates schizophrenia and removes temporarily manic states. Excess or deteriorated epinephrine may lead to schizophrenic-like psychosis.

Another type of evidence points toward epinephrine rather than serotonin. Olds and Olds[2] recently concluded that Marsilid "is an excitant of reward functions in this motivational system of the hypothalamus and that quite probably it has this excitatory function in common with epinephrine." In their experiments, serotonin did not have any rewarding effect, nor did nor-epinephrine.

Finally, the depression and apathy induced by reserpine is antagonized by epinephrine but not by serotonin. Everett and Toman[3] reported that reserpinized mice were restored to normal activity by desoxyephedrine and DOPA, the precursor of nor-epinephrine. Marsilid enhanced the effect of these compounds but did not in itself activate the animals. Neither serotonin nor 5-hydroxytryptophane, its precursor, was active.

Thus evidence from three sources points to epinephrine as the target for Marsilid activity, namely:

(1) Epinephrine is closely associated with tension, anxiety depression and euphoria whereas serotonin is not.

(2) Epinephrine is rewarding to rats as is Marsilid; serotonin is not.

(3) Epinephrine reverses reserpine induced depression; serotonin does not.

### *Relation of Amine Oxidase Inhibitors to Tension*

Substances which block amine oxidase have unusual properties. They include cocaine, a euphorient and hallucinogen, which blocks both amine oxidase and phenol sulfur esterase, amphetamine, etc., euphorients and activators, LSD-25, an hallucinogen and Marsilid, an antitension drug. Early in 1957, I suggested that antitension property was related to such inhibition.[4] Recently, it was shown that Marsilid did alter the route of epinephrine metabolism. Axelrod[5] reported that in rats 25 per cent of the 1-epinephrine was diverted into a methoxy derivative. After treatment with Marsilid, this increased to 55 per cent.

At the same time, Friend et al.[6] reported that Marsilid decreased the rate of destruction of infused nor-epinephrine and epinephrine. Moreover in eight out of ten volunteers, he noted mild euphoria and increased excitement after the infusion. Marsilid apparently negated the tension of epinephrine and converted it into a euphorient.

I would therefore expect Marsilid also to increase the formation of adrenochrome. We are, at present, examining this problem.

## Anti Tension Properties of Adrenochrome and Adrenolutin

### *Adrenolutin and Volunteers*

When we first began experimentation with adrenolutin, we did not know what type of experience would be produced. One of the consistent early and sustained observations is the ability of adrenolutin to moderate tension. The following statements were recorded by skilled volunteers, i.e. psychia trists and psychologists, who expected to be more tense and anxious.

Subject L: "It feels like I've had a mild sedative."

Subject H: Became drowsy within one half hour and that evening remained lazy and indierent.

Subject C: Had a feeling of lassitude and apathy.

Subject D: This subject was so tense and anxious, there was a marked tremor and I had to steady his hand before he could drink the adrenolutin. He reported "over the next twenty minutes or so the anxiety steadily decreased until about 6:30 P.M. when it was replaced by a feeling of complete indifference. This feeling is difficult to describe. It was unlike anything I have experienced before. At

7:00 P.M. I went to the EEG department. I remember contrasting this visit with the one in the afternoon before I took the drug. During the afternoon, I chatted with the technician and was interested in all that was going on; now as a person he hardly existed for me. As he moved my head around to apply the band, I remember thinking that I was like one of the monkeys treated with serpasil in a recent Ciba film. During the time the EEG was taken, I lay perfectly relaxed."

### *Adrenochrome and Patients*

Ten mg. adrenochrome was given intravenously routinely to psychiatric patients with no preparation psychologically. The results are shown in Table II, and are summarized in Table III. It can be seen that adrenochrome reduced tension in five out of ten schizophrenics, four out of five anxiety and depression patients and in two out of five alcoholics or a total of 11 out of 20 cases.

### *Adrenochrome and LSD-25*

We have found that after the administration of LSD-25 adrenochrome levels are increased in blood and urine. When the adrenochrome response is not found, the subjects are extremely tense and do not have a normal reaction. If adrenochrome is given after LSD-25, the tension quickly disappears. There appears to be an inverse relationship between the level of tension and the increase in adrenochrome.

This is evidence that:

(1) There is a relationship between epinephrine and tension,

(2) Amine oxidase inhibitors are anti-tension,

(3) Adrenochrome and adrenolutin are anti-tension.

TABLE II

*Effect of Adrenochrome (10 mg. I.V.) on Tension*

| Diagnosis | No | Tension | Other Changes |
|---|---|---|---|
| Schizophrenic | 1 | Increase, 6 hrs | weak, depressed |
| | 2 | No change | weak, unsteady |
| | 3 | Relaxed | visual distortions of face |
| | 4 | No change | none |
| | 5 | Relaxed, 2 hrs | detached, marked visual changes & hallucinations all day |
| | 6 | Relaxed, ½ hr | visual changes |
| | 7 | Relaxed, ½ hr | hallucinations |
| | 8 | No change | visual changes |
| | 9 | Relaxed, 1 hr | visual changes |
| | 10 | Increased, 2 hrs | apathetic |
| Anxiety | 11 | Relaxed, 2 hrs | weak, unsteady, later depressed |
| | 12 | Very relaxed, 2 hrs | none |
| | 13 | Relaxed, 20 min | none |
| Depression | 14 | Increase, 3 hrs | very weak |
| | 15 | Very relaxed, 1 hr | emotionally labile |
| Alcoholic | 16 | Relaxed, 20 min | visual changes |
| | 17 | Relaxed, 45 min | visual changes |
| | 18 | Increased 15 min. | slight vis. changes |
| | 19 | No change | none |
| | 20 | No change | |

TABLE III

*Tension*

| GROUP | —TENSION— No. | Increase | No Change | Decrease | Other Changes Visual | Changes |
|---|---|---|---|---|---|---|
| Schizophrenic | 10 | 2 | 3 | 5 | 9 | 6 |
| Anxiety | 3 | 0 | 0 | 3 | 1 | 0 |
| Depression | 2 | 1 | 0 | 1 | 2 | 0 |
| Alcoholic | 5 | 1 | 2 | 2 | 3 | 3 |
| Total | 20 | 4 | 5 | 11 | 15 | 9 |

## Discussion

It is therefore likely that in the brain, there is a smooth flow of epinephrine through adrenochrome to other substances. External events which stimulate the sympathetic nervous system increase the production of epinephrine which is perceived as tension. The resultant diversion of the epinephrine to adrenochrome results in a relative decrease in epinephrine and the production of an antitension buffer. As long as the ratio fluctuates over narrow limits, the person is normal.

If there is either too much epinephrine or too little conversion to adrenochrome, the net clinical result will be tension. An example of the first type is phenochromocytoma. Examples of the second are, I think, the tension states. Marsilid, by blocking amine oxidase, increases the production of adrenochrome and restores the balance. Too much Marsilid drives the balance too far and results in feelings of unreality, euphoria and finally schizophrenia.

If these ideas are correct, two other suggestions follow. First, it might be possible to induce tension artificially in humans by giving them epinephrine. One could then screen chemicals for antitension effect by seeing if they counter epinephrine-induced tension. Secondly, if the Marsilid psychosis is due to excess adrenochrome, one will be able to reverse this or even prevent it by giving these patients at the same time nicotinic acid which we have found counteracts adrenochrome and effctively treats early schizophrenia and/or ascorbic acid which inhibits the conversion of adrenochrome into adrenolutin.

**Summary**

Certain facts suggest that the antitension activity of Marsilid depends upon some interference with epinephrine metabolism. These are (1) the clear relationship between epinephrine and anxiety, (2) the antitension properties of amine oxidase inhibitors, and (3) the antitension properties of adrenochrome.

As a working hypothesis, I suggest that Marsilid is antitension because it increases the production of adrenochrome in the brain.

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# *Diseases of the Nervous System*

## INDEX 1959 — Volume XX


**Acute Brain Syndrome** ..... July 296
Irving J. Farber

**Adolescents Studied with a New Projective Drawing Test** ..... Supp. May 61
Ferruccio A. di Cori

**Aging Process—Physiologic and Pathologic** ..... Supp. May 112
Gedeon Eros

**Aging Within Hallucinations** ..... June 272
P. Gordon Lever

**Analysis of 133 Homosexuals** ..... June 246
Fred Mendelsohn and Mathew Ross

**Antidepressant Medications, Cumulative Index** ..... May 197
Nathan Thal

**Ataractic Agents, Two Evaluated** ..... January 27
N. William Winkelman, Jr.

**Ataractic Drugs, History and Pharmacology of** ..... August 365
Maurice Klotz

**Atropine, Differential Responses to** ..... September 387
A. Hoffer and M. J. Callbeck

**Autopsy and Clinical Diagnosis Compared** ..... September 406
Benjamin Rothfeld

**Behavior Disorders in Children, Diagnosis and Treatment** ..... August 334
George J. Lytton and Mauricio Knobel

**Brain Disorders, Response to Auditory Stimuli** ..... October 446
Conrad W. Baars and Warren L. Stewart

**Calibrated Sedac: New Aid to Neurology** ..... Supp. May 126
Saul I. Heller and Reuben Reiter

**Cerebral Hemispheres, the Unadapted State and Schizophrenia** ..... Supp. May 58
Loring F. Chapman

**Child Guidance Clinic, Treatment** ..... November 518
H. James Crecraft

**Chlorpromazine and Meprobamate in Psychotic Patients** ..... September 427
John C. Pollard

**Chlorpromazine and Reserpine Compared** ..... October 452
J. R. Shawver, D. R. Gorham, L. W. Leskin, W. W. Good and D. E. Kabnick

**Chlorpromazine in the Discharged Hospital Patient** ..... November 512
Werner Tuteur, Rochus Stiller and Jacob Glotzer

**Chlorpromazine in Treatment of Chronic Mental Patients** ..... March 134
C. E. Smith, J. R. Harris and A. L. Garrett

**Color Analysis of the Pyramid Test** ..... May 211
P. O. O'Reilly and Duncan Blewett

**Conditional Psychogalvanic Reflex and AOI** ..... Supp. August 26
Leo Alexander and Suzanne R. Lipsett—Discussant: Herbert Freed

**Conditional Reflex Method and Preventive Psychiatry** ..... Supp. May 30
W. Horsley Gantt

**Convulsive Therapy, Prognostic Application of Psychological Techniques in** ..... Supp. May 180
Robert L. Kahn and Max Pollack

**Convulsive Therapy Without Curarization** ..... July 308
E. Friedman, P. L. Forster, A. T. George and J. W. Vieze

**$CO_2$ Therapy in Broad Spectrum Psychiatric Treatment** ..... Supp. May 97
Paul H. Wilcox

**$CO_2$ Therapy, Present Status of** ..... Supp. May 83
L. J. Meduna

**Dartal in Treatment of Hospitalized Schizophrenics** ..... July 302
Dean M. Laird and Justin M. Hope

**Deanol: A Clinical Trial** ..... June 267
Calvin E. Schorer and Paul Lowinger

**Depressions, Action of Successful Treatment** ..... Supp. May 53
Anthony Sainz

**Depressive States in Ambulatory Patients, Treatment of** ..... Supp. August 34
F. J. Ayd, Jr., E. Bianco and L. Zullo

**Depressive States Treated in Office Practice** ..... June 263
J. L. Bell, H. Tauber, A. Santy and F. Pulito

**Deprol in Depressive Conditions** ..... August 364
Karl Rickels and James H. Ewing

**Deprol in Psychiatric Out-Patients** ..... May 216
Donald D. Lathrop

**Differences on Measures of Self Concept** ..... April 150
D. H. Funkenstein, H. Wechsler, J. F. Merrifield and C. C. McArthur
**Differential Narco-Stimulation** ..... June 238
Albert A. LaVerne
**Drug Delirium Due to Meprobamate** ..... May 225
Harry F. Darling
**Drug Therapy Appraised** ..... Supp. May 93
Harry A. LaBurt
**ECT vs. Tranquilizers in Chronic Schizophrenics** ..... Supp. May 132
H. Tanowitz, J. E. Rappa and J. Marchitello
**Electroencephalogram of Multiple Sclerosis** ..... January 41
James B. Funkhouser and Benedict Nagler
**Electrocardiographic Non-Specific T Wave Changes** ..... September 400
George H. Sweeney, John N. Forrest and Alphonse Telfeian
**Electroencephalographic Findings in Matricide** ..... April 176
Don L. Winfield and Orhan Ozturk
**Electro-Stimulative Technics, Effectiveness of** ..... Supp. May 79
C. Buckman, M. Fenichel, I. Pinsley and J. M. Erdos
**Electrostimulative Therapy, Medico-Legal Aspects** ..... December 571
John D. Moriarty and Armond M. Jewell
**Empathic Communication and Anxiety in Medical Students** ..... November 543
Morris Weinstein and F. D. McCandless
**Epilepsy in Servicemen, Aids in Diagnosis** ..... August 342
Chester M. Pierce and Harry H. Lipcon
**Epinephrine-Mecholyl Test** ..... June 250
O. M. Ozturk, A. O. Battle and G. H. Aivazian
**Errors in Judgment When Faced with an "Affront"** ..... January 39
Edmund Bergler
**Erythrocytes from Schizophrenic Patients** ..... February 87
A. Hoffer
**Etiology of Depression** ..... October 477
George G. Merrill
**Extrapyramidal Symptoms of Triflupromazine, Mepazine, Prochlorperazine** ..... December 593
Harry F. Darling
**Family Structures of Schizophrenic Patients** ..... February 57
Mary H. Lystad
**Fluphenazine: A Preliminary Study** ..... April 167
Harry F. Darling
**Fluphenazine, Clinical Experience with** ..... September 403
G. Donald Niswander and Ismet Karacan
**Glutethimide (Doriden) Withdrawal** ..... November 524
Earl A. Lloyd and Lincoln D. Clark
**Gonadal Immaturity in Mental Deficiency and Its Therapy** ..... Supp. May 106
H. H. Berman, K. E. Albert-Gasorek and M. Reiss
**Group Psychotherapy, Dynamics of** ..... June 258
Samuel B. Hadden
**Group Treatment of Chronic Schizophrenics** ..... January 17
J. W. Klapman
**Gunther's Accommodation Index** ..... March 103
Jorge Weibel
**High Frequency Electric Currents (Sedac)** ..... Supp. May 129
Alfred E. Eyres, Josephine Knight and Reuben Reiter
**Histopathologic Findings Following Administration of Tranquilizers** ..... Supp. May 176
L. Roizin, G. Eros, G. Gold, F. Weinberg, W. H. English and T. Wodraska
**Hydroxyzine in Institutionalized Patients** ..... October 468
C. H. Carter
**Hydroxyzine, Use in Psychosis** ..... March 126
William S. Schram
**Hypnotherapy and Symptom Relief** ..... December 583
Jerome M. Schneck
**Imipramine in Depressions in Private Practice** ..... September 391
D. B. Ruskin and R. D. Goldner
**Insomnia, Role of Anxiety and Tension in** ..... December 591
Oscar Rozett
**Insulin Shock Treatment at Brooklyn State Hospital** ..... Supp. May 81
Milton E. Schwartz
**Iproniazid and Reserpine in Depressed and Regressed Patients** ..... January 31
John C. Saunders, Nada Radinger, Dina Rochlin and Nathan S. Kline
**Iproniazid, Effects on Chronic and Regressed Schizophrenics** ..... March 123
H. W. Freymuth, H. Waller, P. Baumecker and H. Stein
**Iproniazid Therapy, a 20 Month Study** ..... November 521
Samuel W. Joel

**Iproniazid Used in Attempted Suicide** ..... February 79
Samuel A. Sandler
**Isocarboxazid, An Iproniazid Analog, Preliminary Study** ..... June 269
H. F. Darling, W. Kruse, G. F. Hess and M. G. Hoermann
**Isolated Cerebral Seizure** ..... March 114
Roger Merritt Morrell
**Kymographic Technique to Study Interview Interaction** ..... October 465
John R. Whittier
**Manic-Depressive Reactions, Factors in** ..... November 505
J. B. Parker, Jr., C. D. Spielberger, D. K. Wallace and J. Becker
**Marsilid and Epinephrine Metabolism** ..... December 567
A. Hoffer
**Mecholyl Test, Prognostic Value of** ..... May 209
A. Hoffer and M. J. Callbeck
**Medical Research, Basic Statistical Concepts** ..... September 414
Conrad M. Ayres
**Medical Research, Essence of** ..... November 527
Conrad M. Ayres
**Medical Writing, Graphic Illustration in** ..... Supp. May 68
Conrad M. Ayres
**Menstruation in the Mentally Defective** ..... June 244
Frederick E. Kratter
**Mental Depressions** ..... Supp. May 142
Carl Breitner
**Mental Disease, Material Aspects of** ..... Supp. May 33
Ralph W. Gerard
**Meprobamate and Psychodynamic Alterations** ..... Supp. May 151
H. Azima, J. Sangowicz, J. Spindler and F. J. Azima
**Meprobamate As an Aid in Psychotherapy** ..... December 587
W. J. Muhlfelder, G. L. Garcia and H. C. Eaton
**Meratran, Clinical Study of Anticonvulsant Properties** ..... September 409
Robert E. Ott and Robert H. McMaster
**Metamphetamine Hydrochloride (Methedrine) with Electroconvulsive Therapy** ..... April 171
Charles Z. K. Mitis and Marcelino Amaya
**Methohexital Anesthesia in Electrocerebral Therapy** ..... Supp. May 121
Emerich Friedman
**Migraine and Seizure States in Children** ..... January 9
Cary Suter, Walter O. Klingman, Harry Austin and O. W. Lacy
**Milieu Therapy Appraised** ..... Supp. May 89
Irving M. Rosen
**Modified Electroshock Therapy Surveyed** ..... May 213
Oscar Rozett
**Mongolism, Basic Studies in** ..... April 162
M. J. Carver, Hobart Wiltse and C. L. Wittson
**Mono-Amino-Oxidase Inhibitors in Endogeneous Depressions** ..... November 537
Anthony Sainz
**Multiple Sclerosis and Rheumatic Fever: Related Diseases** ..... May 221
Dewey K. Ziegler
**Music and Recreation, Effects on Patients Receiving Electroconvulsive Therapy** ..... April 179
Gerald O'Morrow
**Neuromuscular Symptoms Caused by Perphenazine (Trilafon)** ..... January 24
Jay Shanon
**Nialamide, A Clinical Evaluation** ..... Supp. August 50
James A. Johnson, Jr.
**Nialamide, A Pharmacologic Summary** ..... Supp. August 5
Robert P. Rowe
**Nialamide for the Treatment of Anergy and Depression** ..... Supp. August 22
M. Vaisberg, C. L. McGahee, N. Radinger and J. C. Saunders—Discussant: A. A. Kurland
**Nialamide in Anergic Schizophrenia** ..... Supp. August 41
Paul E. Feldman—Discussant: Douglas Goldman
**Nialamide in Chronically Ill Mental Patients** ..... Supp. August 47
Jackson A. Smith
**Nialamide in Depression—Clinical Experience** ..... Supp. August 53
Richard C. Proctor—Discussant: Trajan Shipley
**Nialamide in Geriatric Patients** ..... Supp. August 38
G. J. Mouratoff, A. J. Grossman and R. C. Batterman
**Nialamide in Metabolic Studies** ..... Supp. August 10
B. M. Bloom, R. L. Wagner, C. S. Delahunt and E. C. Schreiber
Discussants: S. Udenfriend and C. Pfeiffer
**Nialamide in the Private Practice of Psychiatry** ..... October 482
Nathan S. Kline

**Nialamide (Niamid) in Treatment of Depressions** ..... December 596
Sam Parker
**Nicotinic Acid, Specificity of Hypocholesterolemic Activity** ..... July 286
A. Hoffer, P. O. O'Reilly and M. J. Callbeck
**Parkinsonism Induced by Tranquilizing Drugs** ..... August 346
Paul Guggenheim and Leon Cohen
**Parkinson-like Signs Pharmacologically Induced** ..... March 119
William N. Karn, Jr., and Sidney Kasper
**Patient Improvement and Psychiatric Nursing Care** ..... August 357
Gordon R. Forrer and James L. Grisell
**Phenothiazine Derivatives, Effects on Liver Function** ..... Supp. May 161
Wolfram Keup
**Positive Spike Discharges in Routine Sleeping EEG's** ..... August 340
C. G. Glenn and Rhoda Knuth
**Post-Graduate Pastoral Counseling Seminars** ..... December 575
E. Adams Daneman and John I. Smith
**Preventive Psychiatry, Dimensions of** ..... Supp. May 9
Cyril M. Franks
**Problems of Indications As Viewed by a Psychoanalyst** ..... Supp. May 84
Rudolph M. Loewenstein
**Progressive Muscular Dystrophy, Clinical and EEG Observations** ..... July 288
Henriette L. Wayne and A. N. Browne-Mayers
**Promazine Therapy for Schizophrenia** ..... October 472
G. H. Aivazian and Harvey C. Reese, Jr.
**Psychiatric Armamentarium** ..... Supp. May 75
Leo Alexander
**Psychiatric Treatment in a University Setting** ..... December 561
George C. Ham
**Psychodynamic and Physiodynamic Approaches in Research** ..... Supp. May 42
John D. Ranier
**Psychoenergetics** ..... April 182
Theodore R. Robie
**Psychoneurotic Symptoms, A Theory on Their Causes** ..... Supp. May 49
Robert Arnot
**Psychosomatic Diseases, "Pointers" on Treatment** ..... September 420
Edmund Bergler
**Rauwolfia Derivatives in Schizophrenic States** ..... April 165
H. Azima and Fern J. Azima
**Report on a New Mental Drug, Preliminary Investigation** ..... December 597
Charles W. Castner and Roy C. Noble
**Ritalin in Chronic Underactive Schizophrenics** ..... February 69
Russell A. Pargiter
**Schizophrenic Veterans, Background Material** ..... March 110
T. E. Dancey and G. J. Sarwer-Foner
**Seizures in Neurosyphilis** ..... April 156
Gregory S. Ferriss
**Senile and Arteriosclerotic Mental Patient, Care and Treatment of** ..... Supp. May 102
Nathan Beckenstein
**Social Psychiatry's Contribution to Preventive Psychiatry** ..... Supp. May 22
Marvin K. Opler
**Somnambulistic Homicide** ..... November 534
Edward Podolsky
**Spectrophotometric Studies on Urinary Constituents of Schizophrenics** ..... July 292
Charles Angel, Arthur J. Roberts and Mary L. Burkett
**State Hospitals' Changing Populations** ..... November 530
A. L. Seale, M. Miller, C. Watkins and C. Wurster
**Steroid and Psychotherapy in Childhood Ulcerative Colitis** ..... March 130
Grace K. Jameson
**Stiff-Man Syndrome** ..... June 254
Z. S. Sikes
**Succinylcholine Modified EST** ..... Supp. May 125
James E. Rappa
**Syndromic Approach to "Acting-Out" Children** ..... February 80
Mauricio Knobel
**Taraxein Administered in Humans** ..... May 206
R. G. Heath, S. B. Cohen, F. Silva, B. E. Leach and M. Cohen
**Tranquilizers and Energizers, Electric vs. Chemical** ..... February 74
William L. Holt, Jr.
**Tranquilizers, Measurement of Attitudes Toward** ..... October 457
Aaron S. Mason and Joseph M. Sacks
**Transaminase Activity in the Spinal Fluid** ..... October 460
J. D. Stevens, F. A. Majka and F. L. Humoller

**Transaminase Controlled Nialamide** ..... Supp. August 18
T. R. Robie, F. Wroblewski and E. Albano
**Treatment in Private Practice** ..... August 353
Sullivan G. Bedell
**Trifluoperazine in Anxiety and Tension States** ..... July 300
Edgar M. Ernst
**Trifluoperazine in Emotionally Disturbed Office Patients** ..... February 66
J. B. Gearren
**Tripelennamine Hydrochloride As a Narcotic-like Substitute** ..... July 317
Eugene Revitch and George Weiss
**Unidirectional Current Modified by Succinylcholine in ECT of the Aged** ..... Supp. May 118
James E. Rappa and Herman Tanowitz
**Vocational Rehabilitation As a Therapeutic Tool** ..... September 425
John T. Toppen and Harvey E. Wolfe
**What Are We Teaching?** ..... February 62
Harold C. Voris

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